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A Clinical and Pathological Report on Forty-nine Solid Ovarian Tumours, of which Thirty-one were Fibromata.

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DURING 20⅔ years (February 21st 1887, to October 10th 1907), 488 patients with ovarian tumours have been treated by operation by Dr. Briggs in hospital and private practice. In 439, the ovarian new growths were cystic, and in 49 solid. Simple ovarian, tubo-ovarian, and small broad ligament cysts, and any small solid tumours subsequently found in ovaries removed for other reasons are not included.

Table A.—The 439 cystic tumours show

284 adenocystomata
44 dermoids
36 broad ligament cysts
24 papillomata
50 carcinomata
1 perithelioma (sarcoma)

Table B.—The 49 solid tumours include

31 ovarian fibromata
1 cellular spleen-like tumour
3 fibromata of the ovarian ligament
1 surface papilloma
3 adenomata
8 solid carcinomata
1 solid teratoma (myxo-chondro-sarcoma)
1 round-celled sarcoma

The cases of cystic tumour in Table A were collected from the case sheets and classified: a further sub-division and some readjustment of them would be requisite for more detailed reference: their value at the moment is to indicate the source of the 50 ovarian cystic carcinomata, used by Dr. Walker during his recent research on ovarian cancer. Whilst thus engaged, Dr. Walker discovered only one sarcoma, a perithelioma, the cystic character of which excludes it from this paper. The rarity of cystic sarcoma of the ovary in the whole series of cystic growths attracted our attention. J. Veit[1] gives the ratio of carcinoma—1 in 5·5 of all ovarian tumours and of sarcoma and endothelioma—5·38 per cent., and Martin,[2] after 236 ovariotomies for new growths, reports 42 growths as malignant (18 per cent.); in these 32 were carcinomata = 74·4 per cent. of the malignant, equal to 13·6 per cent. of the whole number. In 81 malignant cases, 21 were sarcomata, inclusive of endothelioma, = 24·7 per cent. of malignant growths.

The statements of the writers in two of the best of popular modern works, each of the highest standard, are contradictory. (1) Under the section diseases of the ovaries, the contributors, Griffith and Williamson,[3] state that "sarcoma of the ovaries is commoner than carcinoma." (2) Clarence Webster[4] informs his readers that "primary sarcoma is less frequent than carcinoma of the ovary." "Secondary carcinoma," Webster adds, "is rare." Readers rightly refrain from criticism until there is more conclusive evidence one way or the other.

Operators, on occasions, must decline to operate for malignant growths: their figures are essentially approximate.

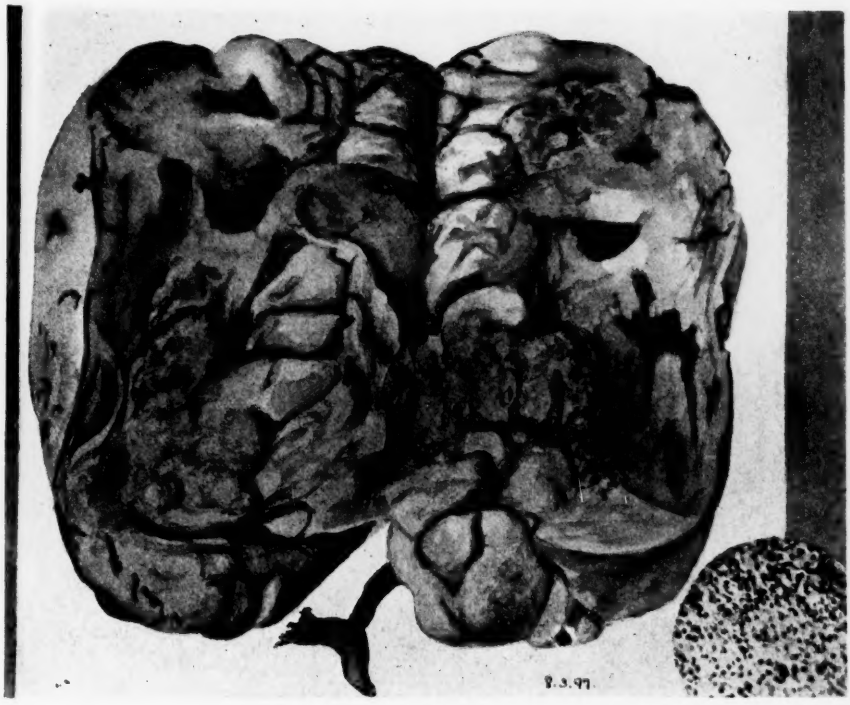
The laboratory report alone is not final if histological research lies amidst normally active tissues: the after-histories of the patients become indispensable.

Griffith and Williamson remark that trustworthy statistics as to the frequency of sarcoma are not easy to obtain: they reproduce Stander's figures as yielding 6·7 per cent. of all the ovarian tumours (total 295) removed in the clinic at Würzburg, during a period of thirteen years. Our own results as to the rarity of sarcoma amongst the 439 ovarian cystomata may be exceptional, or, on our own further pursuits, we may find them incorrect. We are, however, confident that, in our completed work on the 49 solid ovarian tumours on which this communication is mainly based, there were only two ovarian sarcomata against eight ovarian carcinomata.

Solid Ovarian Tumours

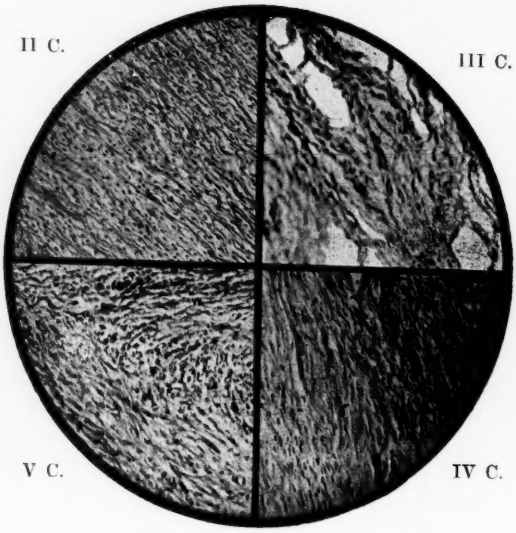
(Tables C, D, E, F, G, H, I, J, K, in the series 49 in 488, *i.e.*, 10%.)

Ovarian fibromata, excluding the cellular spleen-like tumour last one in Table C, are 31 in number (Tables C, D, E), and



A brain-like cellular fibroma. Case VII C.

I C.
II D.
I E.
I D.


II C.
III C.
V C.
IV C.

they form the bulk of the solid tumours. At two per cent. of all ovarian growths their frequency is understated. Our series yields 31 in 488, or 6·4 per cent. In 1874, when Leopold [5] led the way with a collection of 59 solid tumours, he inferred that some of the 19 cases described by their respective authors as fibromata were probably sarcomata.

Dr. Briggs [6] was amongst the first to recognize that even the highly cellular connective tissue tumours of the ovary were not necessarily sarcomata; the after-histories of 8 cases of fibroma of the ovary and one case of fibroma of the ovarian ligament were then produced, the structures of the growths were described and illustrated. They, together with cases by Doran and others, formed the basis of a paper in support of the conclusion that solid, heavy, primary tumours of the ovary were probably fibromata and not sarcomata.

Whilst that paper was actually in the press, in March 1897, Dr. Francis Johnston, of Birkenhead, had under his care a girl, aged $15\frac{1}{2}$, with a large tumour, lying amidst ascitic fluid: the physical signs were indicative of a primary ovarian growth (Case VII, Table C). The tumour, 8x6x6 inches, was removed: its soft, brain-like structure, mainly composed of round-celled tissue, seemed to indicate the desirability of reconsidering the above conclusion. The lapse of time and the vigorous health of the patient at the age of 26 years have, however, established beyond a possible doubt the innocence of this apparently sarcomatous tumour.

There is a wide range of structure between that of the brain-like tumour just mentioned and that of a structureless, or almost structureless, calcified fibroma (Case VIII, Table D): yet they are included under fibromata. Too much, or too little, may be implied by a heading. One tumour, the innocence of which was proved by the patient's after history, was so cellular, and vascular, and spleen-like in character, so scantily fibrous, that it could not be rightly included under the fibromata. Professor Sir Rubert Boyce, a few days ago, advised us to place it separately under its own briefly descriptive heading in Table C. (See illustrations facing page 83). A similar isolation of the cellular brain-like tumour (VII C) had not been adopted. The two are amongst the rarest of innocent connective-tissue tumours, closely simulating sarcomata. Their innocence was established by the after-histories of the patients. The exceptional and highly cellular character of them is specially noteworthy, whether they be isolated from, or grouped amongst, the fibromata of the ovary.

The ovarian fibromatous tumours commonly consist of spindle and round cells amidst a fully-formed fibrous interlacement, in varying proportions. The overwhelming evidence of innocency amongst these tumours has diminished the older, too frequent, dread of

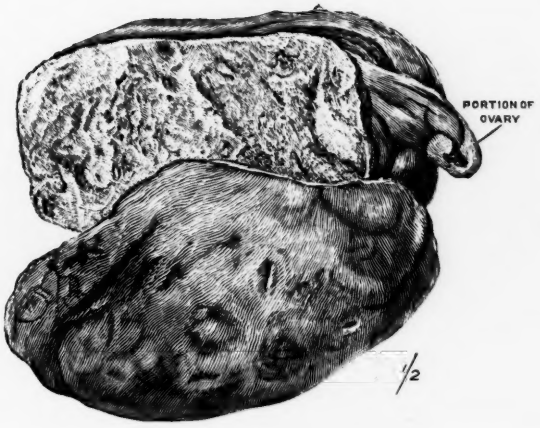
sarcoma of the ovary, due to histological difficulties, not yet removed but more correctly appreciated. Fibroma is common, 31, and sarcoma is rare, 2, in 49 solid ovarian tumours.

We have realized that the classification of the ovarian fibromatous tumours, with the exception of the pedunculated, must be unsatisfactory: there is no appreciable differentiation in structure amongst the diffuse, circumscribed and pedunculated tumours: and the gross distribution of the fibromata in relation to the ovary, at the stage when surgical treatment is common, may account for the preponderating proportion of diffuse over circumscribed growths in our series. Virchow,[7] in 1867, stated that the ovary may be completely merged in the tumour, or may, at least partially, remain and be still recognizable: the latter being, in his experience, the more frequent. Virchow also described a pedunculated fibroma, a post mortem specimen. In the best-known monographs which have since appeared and in the text-books, there occurs the contrary statement that "a diffuse fibroma entirely replacing the ovary is the most frequent." This is no committal to a diffuse formation *ab initio*.

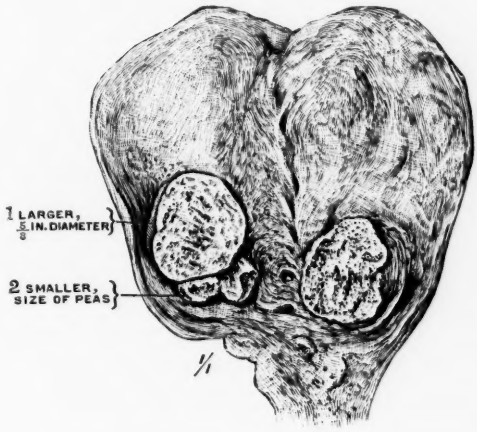
A diffuse origin has received some authoritative support from two small tumours: one, the size of a walnut, described by Leopold,[5] and one, the size of a pullet's egg, by Coe.[9] Virchow[7] himself has mentioned a diffuse fibrous induration both in the stroma and capsule of the ovary associated with the origin of fibromatous new growths. A post mortem specimen, illustrated by Dr. Briggs[6] in 1897, exemplifies a diffuse fibrous transformation of an ovary in which a nest of three small fibromata had grown. The largest of the three was half-an-inch in diameter; according to Rokitansky, who cited two cases, these growths originate in the cicatrix of a corpus luteum and are rarely larger than a pea. They are of pathological rather than of clinical interest.

Quite recently, Fairbairn[8] has done valuable work in regard to the pathology of ovarian fibromata: of the seven growths he himself carefully investigated, six were circumscribed tumours, and even the large growths he found he could, partially or wholly, enucleate. (1) $7 \times 7\frac{1}{2} \times 4$; (2) $6\frac{1}{2} \times 4\frac{3}{4} \times 4$; (3) $6\frac{1}{2} \times 4\frac{1}{4} \times 3\frac{1}{2}$; (4) $3\frac{3}{4} \times 2\frac{3}{4} \times 2\frac{1}{4}$; (7) $5\frac{1}{2} \times 5 \times 4$ inches; (5) and (6) were small growths: the latter, probably a pedunculated fibroma. The ovarian glandular remains were recognized in all: in (6), Dr. Fenton's patient, the ovary to which the growth was attached was not removed. On this report, notwithstanding previous recent statements to the contrary, fibroids of the uterus and fibromata of the ovary in their gross disposition, are to be more closely associated.

Like Fairbairn, we have been able to show encapsulation to have been the rule. We have classed as diffuse, in our series, all growths from which the recognizable ovary, except some of its capsular fibres, had entirely gone. Diffuse[10] fibromata in other glands, the breast, the liver and the kidney, are mixed with glandular tissues. In the

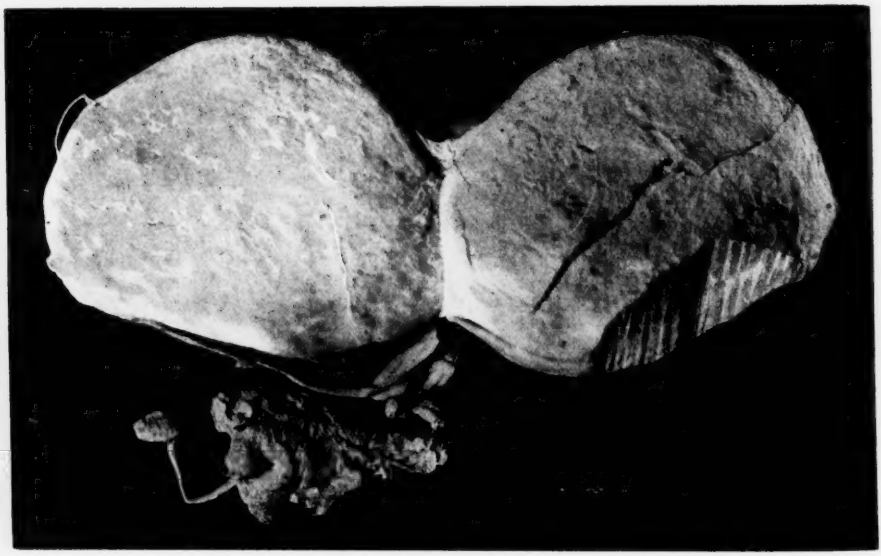


Case 1 E.—Spindle-celled fibroma.



Diffuse fibromatous transformation of ovary with a nest of three ovarian fibromata. (See page 80.) A post mortem specimen.

Bilateral diffuse fibromata. Case IX C.



Small circumscribed tumour, to show capsule separated near the pedicle. Case III C

uterus the diffuse fibro-adenomyoma is rare but well recognized. The ovary, in this respect, is exceptional, and in it a growth, primarily circumscribed, may assume the physical characteristics of the diffuse: the prevalence of the circumscribed amongst small, and of the diffuse amongst large, tumours in the 31 cases in our series may bear this interpretation. Nine tumours were small, 3½ inches, or less, in diameter, of these 7 were circumscribed, 1 pedunculated, and 1 diffuse: the remaining 22 growths were large, ranging up to 11x7x8 inches: of these two have been classed as circumscribed, six as pedunculated, and fourteen as diffuse. No case has been counted twice.

Diffuse fibromata have been described as frequently bilateral: in our series of 31 cases there were only two instances of bilateral tumours: in one case (IX C) the diffuse tumours were nearly equal in size, and in the other (III C) one small tumour, 2 inches in diameter, co-existed with a large tumour, 7 inches in diameter: they were identical in structure: the small one was circumscribed and readily separable, through loose areolar tissue, from its envelope of ovarian glandular tissue, and the large one retained the thinned, inseparable tunica albuginea. The two last-named growths do not afford incontrovertible testimony as to either a co-existence of the circumscribed and diffuse forms or a manifestation of an earlier and later stage of circumscribed tumours: they were truly bilateral but not diffuse bilateral fibromata.

In each of the 15 tumours we have classed as diffuse there were traces of a fibrous capsule, partial or complete, never completely separable, though occasionally separable through an insignificant area around the hilum and invariably devoid of recognizable ovarian glandular relics.

The absence of ovarian glandular remains around large tumours ranging up to 11x7x8 inches, and all above 3½ inches in diameter is not inconsistent with their having developed from a local centric origin. An eccentric origin is, however, more frequent and more persistently revealed: in our series there were 16 definite examples.

Virchow pointed out the disposition towards the free pole, hence the common survival near the hilum of the ovarian glandular relics.

The site of origin has more influence than the size of the tumour in determining its ultimate form.

The smallest, 3½x3x3 inches (VI C), of our 15 diffuse tumours, a spindle-celled fibroma, possessed a finely nodulated surface: the mesosalpinx was slightly invaded.

The mesosalpinx in another case of spindle-celled fibroma (XV C) had been opened out, and the Fallopian tube had become sessile on the tumour. In all the others of our series the mesosalpinx was unaffected.

The circumscribed growths, nine in number, displayed the remains

of the normal ovary in various situations: (*a*) as an envelope, partial or complete, (*b*) as a boss at the site of the pedicle, or (*c*) as an appendage on the distal surface of the tumour. The capsules were not always complete: in one instance six-sevenths of the capsule was almost inappreciable. There was complete evidence of their eccentric origin. Six of the growths were 3 inches, or less, in diameter, and the largest was 7½x5x4 inches.

The pedunculated tumours, seven in number, were mostly larger than the circumscribed: only two were under 4 inches in diameter, and the largest 9x8x8½ inches. The pedicles, generally narrow, manifested a variety in width, length, and site of attachment to the ovary: two arose at the free pole, two at the attached pole, and three on the free convex border. If to these pedunculated ovarian fibromata the three pedunculated fibromata of the ovarian ligament be added, a total of 10 fibromata, of which 5 were at, or near, the attached pole, is producible against an equal number on the rest of the ovary.

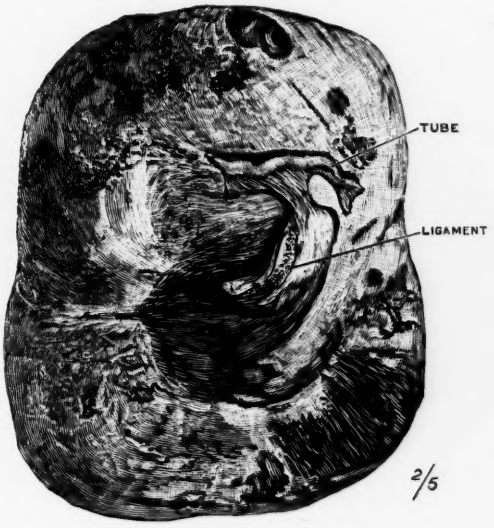
Physical Signs of Ovarian Fibromata.

In our series weight and density were striking features. The surfaces were generally smooth: in many coarsely lobulated, in one deeply furrowed, and in one finely lobulated. The ovarian outline and shape were usually imperfectly retained, but less so than in cyst-adenoma and carcinoma. A pedunculated fibroma may possess a special clinical interest; the ovary may retain its size, shape and outline, and if the pedicle of the tumour be thin and long enough, anatomical continuity may be inappreciable (II E). A reniform hilum (after Leopold) was conspicuous on the surface of the tumour at the bases of the pedicles in Cases II C and II E, the former a diffuse, the latter a pedunculated growth.

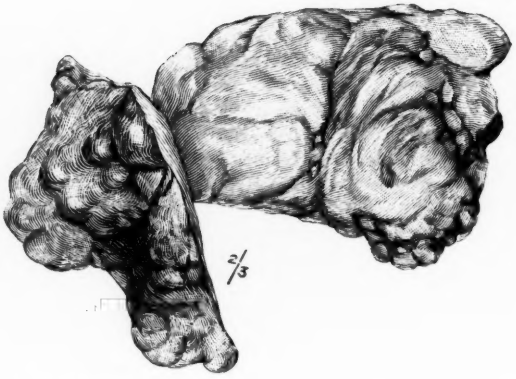
Complications. Fibroids of the uterus co-existed in four instances XIII and XIV C in V D and in VII E. In VI D a large cyst-adenoma of one ovary clinically masked, before its removal, the circumscribed fibroma of the other ovary. Pregnancy, in two cases (II and III D), each with a circumscribed tumour, was undisturbed by operation. Torsion of the pedicle, with symptoms, for three days in one circumscribed (IX D), for two weeks in one pedunculated (VI E), and for 5 weeks in one diffuse (X C), had produced a rapid increase in size and an extensive blood extravasation in all three; in the third case, during the five weeks which elapsed before operation, a large cyst with a thick, uneven, sloughy wall, had developed.

Degenerative changes, apart from torsion of the pedicle, were observable: as lymph cysts in two diffuse (I and III C), one circumscribed (III D) and in two pedunculated (IV and V E); as mucoid patches in one diffuse (II C); as œdema and necrosis in two diffuse (XII and XIV C), and in one circumscribed (V D); as

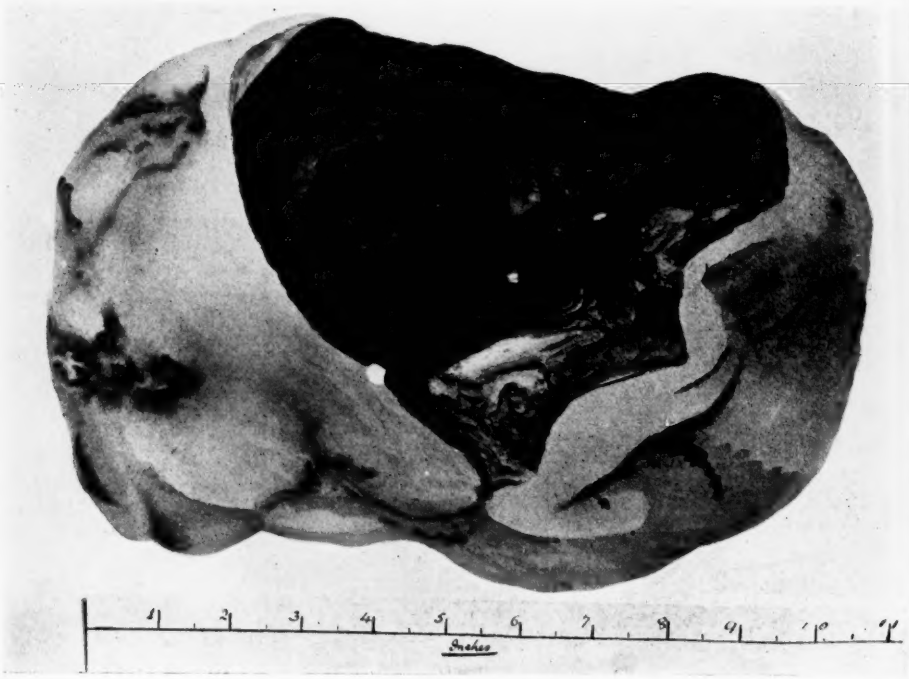
Long narrow pedicle to convex border of ovary. Case II E.



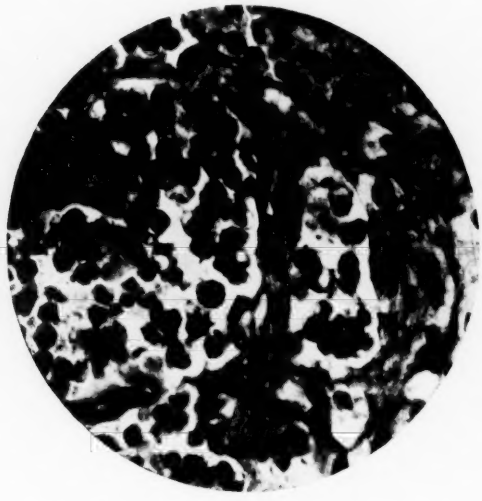
Case II C.—Reniform hilum (p. 82). A cellular fibroma with mucoid patches.



Case I F.—Fibroma of the ovarian ligament (p. 83).



A spleen-like cellular tumour. Table C.



Photomicrograph of spleen-like tumour. Table C.

hæmorrhages near the surface in three diffuse (II, IX, XI, C), and in one pedunculated (III E); as calcification in two circumscribed (II and VII D).

Menstruation. The menopause had been passed in 7 diffuse, in 1 circumscribed, and in 2 pedunculated. The menses were regular in 4 diffuse, 3 circumscribed, and 4 pedunculated; irregular in 1 circumscribed; absent in 2 diffuse and 1 circumscribed; diminished in 1 diffuse.

Cellular Spleen-like Tumour of the Ovary.

(One case, the last one, Table C.)

The highly cellular character of this tumour has been already alluded to under the head of classification. It occurred in a single woman, aged 23, whose abdominal enlargement, during eight months, without ascites, was attended by pain in the left side. The tumour was of soft solid consistence, notched on its upper border, and adherent to the omentum and parietes. It consisted of large connective tissue cells and blood, and resembled splenic pulp. Its pedicle was that of the left ovary, in which it grew. The after-history for 2½ years proved its innocence.

Fibroma of the Ovarian Ligament.

(Three cases, Table F.)

Each was a stalked, dense fibroma, unattended by ascites: one was adherent to the cæcum and parietes. There is nothing to be added to Doran's description of fibromata of the ovarian ligament.

Surface Papilloma of the Ovary.

(One case.)

An ovoid tumour, 5¼x3 inches, had grown superficially on the otherwise normal right ovary which was embedded in the tumour; the corresponding Fallopian tube possessed an accessory fimbriated ostium abdominale; the left ovary and tube were normal; there were fibroids in the uterine wall, and a small uterine corporeal adenomatous polyp.

M.O., aged 47 years, had been married 26 years and had borne one child. Her menses had been irregular, 21—28 days' type, duration 2 to 3 days. There was a history of 4 months' abdominal enlargement. The physical signs were dulness of flanks and fluid thrill. Cervix low down. Tumour of solid consistence and irregular outline felt in the right fornix.. No fixation.

Abdominal section was performed March 7th, 1907, and the uterus and both appendages were removed. Some ascites was found, and a secondary growth on the parietal peritoneum in the line of the incision; the small intestine was adherent to the parietes; the tumour lay in the pouch of Douglas.

Solid Adenoma.

(Three cases, Table G.).

The solid adenomata essentially consist of the structural elements found in cyst-adenomata. The alveolar spaces in the solid adenomata in our series were lined by columnar or cubical cells, in a single layer, in Cases I and II; in Case III the alveoli were packed with epithelial cells. These tumours, to the naked eye, had the appearance of glandular tumours and not of fibromata. The menses were absent for 2½ years in Case II, and in Case I ascites was present. Two of the cases were traced after intervals of 3 and 7 years.

Solid Carcinomata.

(8 cases—7 bilateral,—Table H, and 1 unilateral, Table I.)

Case I, Table H. Bilateral carcinoma, secondary to a breast tumour.
Case II, Table H. Bilateral carcinoma, secondary to a breast tumour.
Case III, Table H. Bilateral adenocarcinoma, secondary to a growth in the rectum.
Case IV, Table H. Bilateral adenocarcinoma, secondary to a growth in the descending colon.
Case V, Table H. Bilateral adenocarcinoma, probably secondary to a growth elsewhere.
Case VI, Table H. Bilateral colloid carcinoma, secondary to a growth in the bowel.
Case VII, Table H. Bilateral colloid carcinoma, secondary to a growth in the cæcum.

Of the seven bilateral solid carcinomata, six were definitely secondary, two to primary scirrhus of the breast and four to growths in the large bowel. The seventh case of bilateral carcinoma (Case V, H) is incomplete in the absence of any record as to a primary origin, in a married woman, aged 48, who died two months after operation.

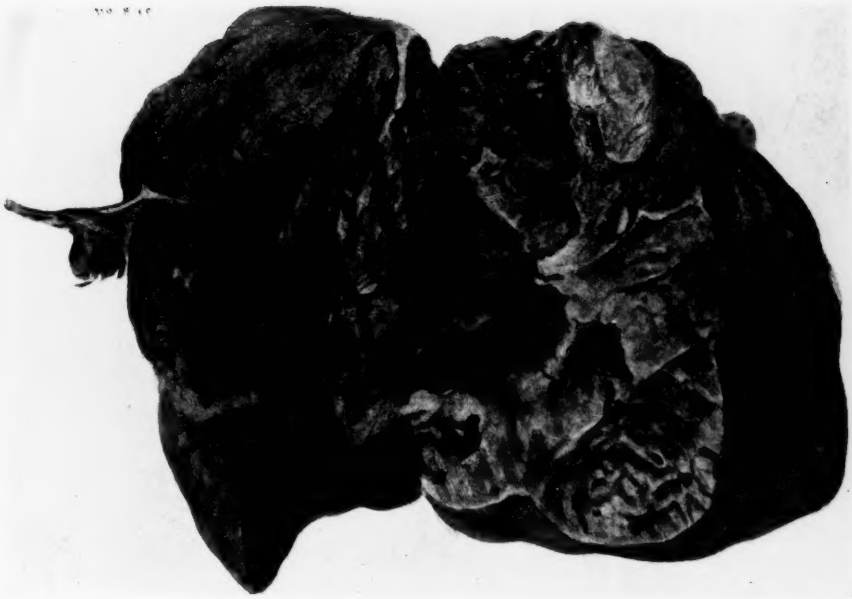
Six-sevenths of the evidence in these cases of bilateral, solid carcinomata coincide with Mr. Bland-Sutton's[11] conclusions that these tumours are secondary.

Unilateral Primary Adenocarcinoma of the Ovary.

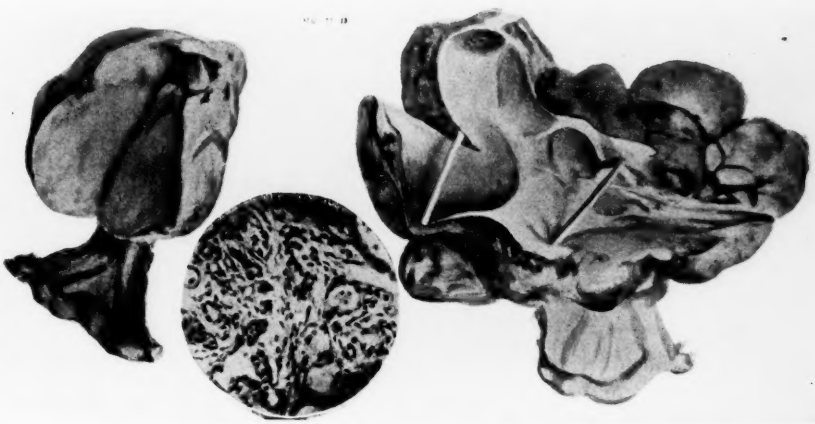
(Table I.)

Exclusive of the secondary cases in our series there was only this one solid cancerous tumour. It was a unilateral adenocarcinoma of the right ovary. The proportion of solid to cystic primary adenocarcinomata was very small in our series.

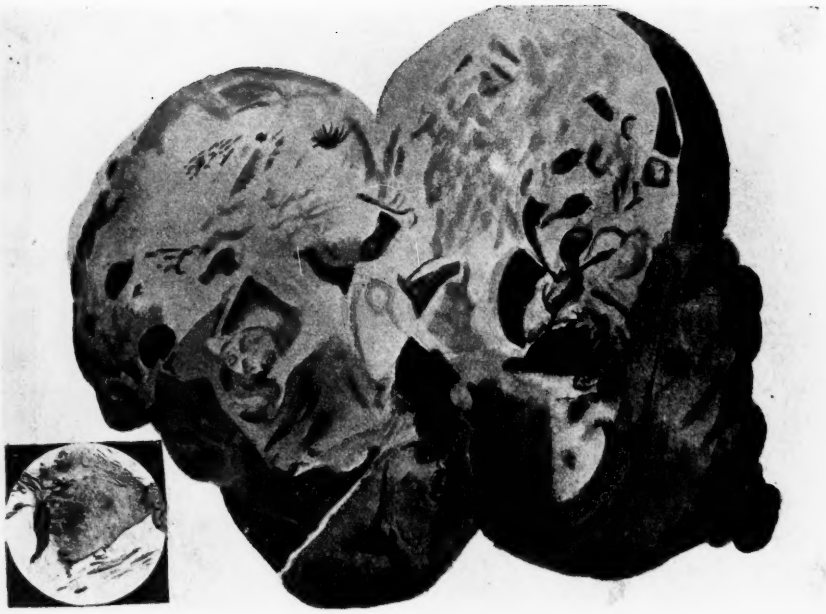
Dr. Walker investigated 50 cases of primary cystic adenocarcinoma, and observed the changed characters of the epithelial



Solid adenoma of the ovary. Case II. G.



Bilateral solid carcinomata. Case IV. H.



Solid teratoma of ovary.

Round-celled growths in omentum, with solid teratoma.

cells—the absence of the goblet cells, their cubical shape, and the invasion by them of the stroma of the ovary—indicative of malignancy having developed in an adenocystoma.

With the exception of one patient (Case III, Table H) who was 16, the ages ranged from 34 to 53. The prominence of intestinal symptoms should arouse suspicion of a primary intestinal growth. Loss of flesh was an almost invariable symptom. Amongst the physical signs ascites was present in 5 of the 8 cases; where it was present the tumours were not markedly adherent; where absent the cancerous ovaries were very adherent.

The result of operation in these cases left much to lament: one of the patients died a week after operation; of the remaining seven, six lived only six months and one three and a half years. (Case I of the secondary carcinomata.)

The only primary solid tumour was, microscopically, an adenocarcinoma; the secondary tumours reproduced the structure of their primary growths—scirrhous carcinoma, colloid carcinoma and adenocarcinoma.

The diagnosis of the solid ovarian tumours was clinically complete in 6 out of the 8 cases. In one case, with a pronounced tuberculous family history, a diagnosis of tuberculous salpingitis was made. In the remaining case the diagnosis was not recorded.

A Solid Teratoma—a Myxo-chondro-sarcoma—of the Ovary. Secondary Deposits of Round-celled Tissue in the Omentum, the Liver and the Spleen.

The heavy, solid tumour, and a large mass of omentum, were removed from an emaciated girl, aged 19 years, whose abdomen was tightly distended by ascites and the tumour. The girl's mother stated that she had noticed abdominal enlargement for 18 months; menstrual suppression for 6 months. The girl died from shock within 24 hours of the hopeless operation.

Round-celled Sarcoma of both Ovaries.

S.McC., aged 29, had been married 2½ years, but had not been pregnant. Her menses, formerly regular, have latterly, for 3 months, occurred at more frequent intervals of 14 days; one period last June was omitted. During the last 3 months there have been pain and swelling in the lower abdomen and in the left hip. There was ascites, and there were two, heavy, solid tumours. Both ovaries were removed on March 7th, 1899. Blood-stained fluid was abundant in the peritoneal cavity (ascites): each ovarian pedicle was infiltrated with brain-like, sarcomatous tissue. The operation was therefore incomplete. The patient went home relieved.

The ascites returned. She died on December 18th, 1899, from a metastatic tumour of the brain. At the post mortem the broad ligaments were deeply and largely invaded by sarcomatous growths.

Ascites.

A résumé of its occurrence in the whole series is worthy of notice.

With the 31 fibromata 38·7 per cent., *i.e.*, present in 12, absent in 19. With the cellular spleen-like tumour of the ovary, absent. With the 3 fibromata of the ovarian ligament, absent in all. With the surface papilloma of the ovary, present. With the 8 solid carcinomata 62·5 per cent., *i.e.*, present in 5, absent in 3. With the solid teratoma, present. With the round-celled sarcoma, present.

Its absence was constant when adhesions were universal, whether with innocent or cancerous tumours, and after torsion of the pedicle in each of the 3 cases of ovarian fibroma.

Its ætiology is obscure, but attractive enough for a brief note, especially as to its occurrence with the ovarian fibromata: the clinical records before or during the operation give it as present in 12 and absent in 19 patients. Torsion of the pedicle of the tumour was responsible for adhesions in one case of each form of fibroma: adhesions, independent of torsion of the pedicle, were general in 2 diffuse, 1 circumscribed and 1 pedunculated. It is necessary to deduct these cases, proof against ascites, and obtain the net number of cases of each form of ovarian fibroma in which the growth was free or only partially adherent.

The net numbers read: ascites was present in 7 out of 12 diffuse, in 3 out of 5 pedunculated, and in 2 out of 7 circumscribed. The frequency of ascites in our series with free or partially adherent tumours is highest, 60 per cent., in the pedunculated, almost equally high, 58·3 per cent., in the diffuse and least frequent, 28·5 per cent., in the circumscribed.

Each pedunculated growth possesses its own special pedicle to the ovary, in addition to the usual ovarian pedicle, *i.e.*, two pedicles interrupted by the ovary. Torsion of the pedicle of the fibroma itself occurred only once in the seven pedunculated cases in our series. Minor physical disturbance in a pedicle may impede the venous blood currents; it ought to have acted equally with both the circumscribed (28·5 per cent.) and the diffuse (58·3 per cent.), and the second pedicle of the pedunculated only increased by 1·7 per cent. the ratio of ascites with the pedunculated (60 per cent.) compared with the diffuse tumours (58·3 per cent.). The cause of ascites does not, apparently, lie in the pedicle. Freedom of movement is similarly defeated by an analysis of the figures. The pedunculated tumours are totally bare, the diffuse almost totally bare, and the circumscribed only partially bare of ovarian coverings. These conditions, when

Round-celled sarcoma of both ovaries.

Uterus and broad ligaments after recurrence in the latter. The patient had also a sarcoma of the brain.

compared with the percentages, may put forward peritoneal irritation from the bare surfaces of the tumours as the cause of ascites. If it were acceptable, why is ascites ever absent with any form of fibroma except with the completely enveloped tumours, and with them ascites also occurs?

We are driven to consider the vitality of the tumour itself: variable degrees of diminished vitality in the tumour produce varying reactions in the apposed tissues: a plastic fibrinous exudate responds to serious impairment of nutrition as after torsion of the pedicle: a serous exudate similarly may meet a less, or a faint degree of, vital impairment of the tissues of the tumour, the result of their growth over their vascular supply. A peritoneal bath of ascites may be nutritional and not inflammatory in origin.

Removal of a fibromatous tumour cures the ascites. Removal of the scirrhous ovarian growths, secondary to breast cancer, arrested the ascites until local recurrence had reproduced tumours in two cases (Table H) in our series.

The addition of blood to the peritoneal fluid with sarcomata and carcinomata is confirmatory of the view that the tumour itself supplied at least a portion of the ascitic fluid.

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OVARIAN FIBROMATA.

Table C.—DIFFUSE GROWTHS.

	Name, Age, &c.	Symptoms. Kind.	Alleged duration.	Physical signs.	Date of operation.
1.	E.K., 55, widow, no children	Tumour. Menopause 2 years ago	6 months	Large tumour independent of the small uterus	21.10.91
2.	B.A., 22, single	Tumour. Bladder irritable. Menses diminished	3 months	Large tumour independent of the small uterus	24.6.92
3.	M.E.W., 48, married, 5 children (youngest 16 years ago)	Abdominal enlargement. Menopause 6 years ago	2 weeks	Uterus 3in. Large and small tumours. Ascites	22.7.92
4.	A.S., 30, married, 2 children 1 abortion	Tumour	18 months	Uterus 2¾in.; heavy, solid, tumour independent of it	15.6.94
5.	A.G., 68, single	Tumour	3 months	Uterus 2½in. Cervix elevated	14.9.94
6.	E.B., 65, single	Pain. Menopause at 45	2 years	Tumour behind the uterus	9.12.96
7.	J.H., 15½, single	Abdominal enlargement. Menses normal	6 months	Large abdominal tumour. Ascites	8.3.97
8.	L.L., 66, married, 2 children	Abdominal enlargement. Menopause 21 years ago	2 years	Large tumour	3.11.00
9.	L.P., 32, single	Tumour. 8 months' amenorrhœa	4 months	Bilateral ovarian fibroma	13.2.01
10.	M.M., 40, single	Abdominal enlargement: peritoneal crisis 5 weeks ago	4 years	Abdomen distended: uterus small. Large, hard tumour	25.4.01
11.	M.F., 35, single	Tumour increasing. Menses 7/28 dysmenorrhœa	5 weeks	A large abdominal tumour	8.5.03
12.	M.W., 16, single	Tumour: pain in back: 7 months amenorrhœa	6 months	A large solid tumour, independent of the uterus	19.8.04
13.	—O., 64, married, 2 children, 1 abortion	Occasional colicky pain in the left side, vomiting and diarrhœa. Prolapsus uteri, lately unrelieved by ring pessary. Menopause 16 years ago	2 years	Solid tumour in the pelvis behind the uterus and independent of it	18.6.06
14.	M.H., 51, married, no children	Abdominal enlargement: the tumour was found by her doctor 5 years ago, during an attack of peritonitis. She then refused operation. Menopause 5 years ago	5 years	A large abdominal tumour, fluid consistence in parts. Uterus and its fibroids lying to the left	17.4.07
15.	A.T., 67, married, no children, 1 abortion	Tumour: loss of flesh. Menopause 17 years ago	12 months	Large, very hard, abdominal tumour, freely movable	28.6.07
		SPLEEN-LIKE CELLULAR TUMOUR.			
	B.C., 23, single	Abdominal enlargement and pain in the left side	8 months	A large, soft, solid, abdominal tumour	11.5.98

1. Attended at the Rostrevor District Dispensary for "vomiting and diarrhœa," September 1903 (Dr. Vesey).

Operation.	Description of tumour.	After-history.
Ascites. Left ovariotomy	Tumour, mostly solid, 7½x6¼x6in. Fibroma with a few clear cysts	In good health in October 1907
Ascites. Ovariotomy	Solid tumour, 7½x6¼x6in. Cellular fibroma with mucoid patches: superficial hæmorrhages	Fifteen years afterwards in good health, September 1907
Ascites. Double ovariotomy	Large tumour, 7x7x7in., diffuse: small tumour, 2x2x2in., circumscribed. Myxo-fibromata	In good health 4¼ years afterwards. Death from liver dropsy in 1905; 13 years after operation
Ascites. Left ovariotomy	Tumour, 7½x5½x6in. Spindle-celled fibroma, œdematous	In good health in September 1907, 13 years afterwards
No ascites. Universal adhesions. Ovariotomy	Tumour, 11x7x8in., weight 6¾lbs. Fibroma with spindle cells	In good health in September 1907, aged 81 years
No ascites. Left ovariotomy	Tumour, 3½x3x3in., finely nodulated surface. Spindle-celled fibroma	Died on 27.6.01, of bronchitis and debility at the age of 70 years
Ascites. Ovariotomy	Tumour, 8x6x6in., adherent to omentum: of brain-like consistence, and "looked like a sarcoma" in parts. A cellular fibroma	In good health in September 1907
No ascites. Left ovariotomy	Large tumour, 8x6½x6in., half cystic, half solid. Myxofibroma	In good health in September 1907
Double ovariotomy. Ascites	Right tumour, 5½x3x3in. Left tumour, 6x5x4in. Spindle-celled fibroma with superficial hæmorrhages	Died suddenly, in June 1901, of pulmonary embolism from thrombosis of the veins of the leg
Recent adhesions. Right ovariotomy	Tumour, 8¼x6¾x7in., spindle-celled fibroma: pedicle twisted (left-handed screw), extensive blood extravasation and softening	In good health in September 1907
No ascites. Right ovariotomy	Tumour, 7x7x7½in. Myxofibroma, with superficial hæmorrhages	Died, the mother says, 6 months after operation, of diarrhœa.[1]
No ascites. Ovariotomy	Tumour, 7x5x5in., weight 3lbs. Necrotic and œdematous fibroma	In good health in October 1907
No ascites. Left ovariotomy. Enucleation of a small uterine fibroid	Tumour 5½x5x4½in. Spindle-celled fibroma	In good health in October 1907
No ascites. Dense universal adhesions. Right ovariotomy and total hysterectomy	Tumour, 9x9x5in., partly cystic, mainly solid. Left ovary and fibroid uterus removed. Degenerating fibroma of ovary	Died of peritonitis on the third day.[2]
Ascites. Right ovariotomy.	Tumour, 8x8x7in. Tube sessile on the tumour. Spindle-celled fibroma	Recent
No ascites. Left ovariotomy. Adhesions to the omentum and parietes	The tumour contained blood and resembled splenic pulp	The patient remained quite well for 2½ years. She, soon after the operation, married, and in December 1900 she died, after the birth of her second child, of a puerperal illness

2. Adhesions dated from an acute illness 5 years ago when she refused operation; dense and extensive adhesions prolonged the operation.

OVARIAN FIBROMATA.

Table D.—Circumscribed Growths.

	Name, Age, &c.	Symptoms. Kind.	Alleged duration.	Physical signs.	Date of operation.
1.	A.H., 39, married, 11 children, 9 abortions	Occasional pain on exertion. Bladder irritable	12 months	Uterus 3in. Solid tumour independent of it	20.8.96
2.	M.H., 29, married, no children	Pain. Four months pregnant	12 months	Stony-hard tumour independent of the uterus	16.9.96
3.	G.B., 28, married, 3 children, last 4 months ago	None. Tumour found by her doctor when 7 weeks pregnant	—	Tumour of reniform outline, partly cystic	13.2.01
4.	—T., 37, married, 3 children, 1 abortion	Difficult micturition followed by retention when tumour was found by her doctor. Menses 6/28			29.5.02
5.	—H., 32, married, 1 pregnancy (premature, 7 months)	Pelvic pain	Uncertain: "uterine fibroid known for years'	Recent peritonitis: adhesions. Right ovarian fibroma and uterine fibroid	8.5.03
6.	J.B., 65, married, 12 children, 1 abortion	Abdominal enlargement: irritability of bladder and loss of flesh	12 months	Ascites	21.10.03
7.	E.J., 44, married, no children	Dysmenorrhœa and menorrhagia	12 months	A small, hard tumour on the left, behind the enlarged uterus	17.12.03
8.	M.E.W., 42, married, 6 children	Bleeding, pain and loss of weight. Menses irregular	15 months	Prolapsus uteri. Movable, hard tumour, independent of the uterus	22.1.04
9.	R.N., 24, married, 1 child 4 months ago	Occasional pain: 3 days ago, severe peritoneal crisis	2 months	Large abdominal tumour: abdomen distended and tender	23.12.04

OVARIAN FIBROMATA.

Table E.—Pedunculated Growths.

1.	—W., 32, married, no children	Occasional pain: relief by rest	4 months	Uterus small: solid tumour independent of it	10.1.96
2.	M.B., 39, married, 8 children, 1 abortion	Abdominal enlargement: frequent micturition. Menses, 4/28, regular	3 years	Hard abdominal tumour, independent of the uterus: both ovaries palpable	27.2.03
3.	A.W., 24, single	Pain in abdomen: tumour found by doctor a month ago. Menses 4/28, regular	1 month	Uterus to the right. An abdominal tumour, very hard, movable	21.4.04
4.	A.B., 25, married, 2 children	Tumour. Loss of flesh. Menses 4/28, regular	7 months	Large tumour, partly solid. Uterus in front and independent of the tumour	14.11.04
5.	—F., 57, widow, 1 child 24 years ago	Severe sacral pain. Menopause 8 years ago	2 weeks	Solid tumour, retro-uterine, impacted within the pelvis	5.1.06

Operation.	Description of tumour.	After-history.
Ascites. Left ovariotomy	Tumour, 2x2x2in. Spindle-celled fibroma. Capsule one-third ovary two-thirds thin, inseparable coat	In good health in September 1907
No ascites. Left ovariotomy. Pregnancy continued	Tumour, 3x3x3in., almost structureless. A calcified fibroma. Ovarian coat complete	In good health, October 1907
No ascites. Right ovariotomy. Pregnancy continued	Large tumour, 6x4x3½in., with many small cysts and clear fluid. Cellular spindle-celled fibroma	In good health in October 1907
No ascites. Ovariotomy	Solid tumour, 5½x4in. Spindle-celled fibroma. Capsule of ovary $^{1}/_{7}$: inappreciable capsule $^{6}/_{7}$	In good health in September 1907
No ascites. Adhesions. Right ovariotomy. Enucleation of uterine fibroid, 1½x1½in.	Tumour, 3x2x2in., some small necrotic cysts. Small cyst, 1x½in., of ovary in capsule	In good health in October 1907
Ascites. Double ovariotomy	Left ovarian solid tumour, 2½x2x2in. Right ovarian adenocystoma 7x7x7in.	In good health in September 1907
No ascites. Left ovariotomy	Tumour, 2½x2x2in. A calcified fibroma	Uterine fibroids 4x3in., and some metrorrhagia. In fair health in October 1907
No ascites. Left ovariotomy. Repair of cervix and perineum. Dilatation and curettage. Ventrofixation	Tumour, solid, 2½x2½. Cellular spindle-celled fibroma	In good health in October 1907
No ascites. Recent universal fibrinous adhesions. Ovariotomy	Solid tumour, 7½x5x4½in., with a basal boss of ovarian tissue. Pedicle twisted (right-handed screw) several times. Fibroma with extravasated blood	In good health in October 1907
Ascites. Right ovariotomy	Tumour, 4x3x3½in., pedunculated on the attached pole of the ovary. Spindle-celled fibroma	In good health in September 1907
No ascites. Adhesions. Left ovariotomy	Tumour, 9x8x8½in., pedunculated, adherent. Pedicle $^{3}/_{16}$ of an inch thick. Fibroma composed of wavy bands of fibrous tissue	Quite well in October 1907
Slight ascites. Pedicle of the fibroma tied and the tumour only removed	Tumour, 6x5x4in., weight 1¾lbs., pedunculated. Superficial hæmorrhages	In good health in October 1907
No ascites. Left ovariotomy	Tumour, 8x7x6½in., pedunculated from the free pole, the pedicle ½in. wide. Cyst contained several pints of pale yellow fluid. Degenerating fibroma	Quite well in October 1907
Ascites—2½ pints. Left ovariotomy	Tumour, 3½x3x2½in., mainly solid, partly cystic, continuous with the free pole of the ovary: pedicle ½in. wide. Fibroma composed of wavy, interlacing bands	In good health in September 1907

Table E—continued.

	Name, Age, &c.	Symptoms. Kind.	Alleged duration.	Physical signs.	Date of operation.
6.	W., 68, single	Severe pain. Occasional pain	4 months	Solid tumour, to the left, in the pelvis, behind and independent of the uterus	27.2.07
7.	M.E.F., 42, married, no children	Tumour gradually increasing in size. Menses profuse and frequent for 3 years	3 years	Large abdominal tumour: uterine. Smaller tumour filling the pelvis, not connected with the uterine fibroids	11.10.07

FIBROMATA OF THE OVARIAN LIGAMENT.

Table F.

1.	A.J., 35, single	Pain, not totally relieved by rest	6–7 years	Hard tumour of irregular outline, independent of the uterus	7.3.92
2.	E.M.C., 37, married, 1 child, 1 abortion	Tumour found by doctor during pregnancy, 8 months before operation. Went to full term	8 months	Small solid tumour to the right and independent of the uterus	2.10.03
3.	E.S., 37, married, 2 children, 3 abortions	Pain in the back and in the right groin. Menses scanty	18 months	Small, bilateral, solid, movable, pelvic tumour, independent of the uterus	4.10.07

SOLID ADENOMATA.

Table G.

	Name, age, &c.	Symptoms. Kind.	Alleged duration.	Physical signs.	Date of operation.
1.	S.S., 54, married, 11 children	Tumour. Abdominal enlargement: sickness	12 months	Large, solid, abdominal tumour. Uterus drawn up in front	24.9.98
2.	A.L., 38, married, 2 children	Tumour, growing for 2 years. Loss of flesh. Amenorrhœa for $2\frac{1}{2}$ years	5 years	Large, solid, abdominal tumour	2.9.04
3.	A.G., 36, married, 4 children, 1 abortion	Abdominal enlargement. Metrostaxis. Frequency of micturition	3 years	Large, solid, abdominal tumour	17.10.00

Operation.	Description of tumour.	After-history.
Left ovariotomy	Tumour, 5½x4½x3in., dark red in colour, very fine pedicle, ¼in., from the convex border of the ovary. Pedicle twisted (right-handed screw). Fibroma with much blood extravasation	In good health in September 1907
No ascites. Left ovariotomy. Removal of fibroid uterus	Tumour, solid, 5x4½x3½in., pedunculated from the attached pole of the ovary: the ovary was not involved in the growth	Recent
Removal of fibroma of the right ovarian ligament	Tumour, 4x3x3in. Dense fibroma	Well in 1897, not seen since
Removal of stalked fibroma of the ovarian ligament: many adhesions	Tumour, solid, pedunculated from the ovarian ligament. Dense fibroma	In good health in October 1907
Removal of stalked fibroma of the left ovarian ligament: panhysterectomy	Tumour, 2x1¾x1¾in., solid. Dense fibroma	——

Operation.	General condition.	Description of tumour.	After-history.
Ascites. Right ovariotomy. Some adhesions	Good	Tumour, 8x4x4½in., an adenoma	——
Left ovariotomy. Many adhesions. No ascites	Fair	Tumour, 7x5x5½in., microscopically indistinguishable from carcinoma	Quite well in July 1907
Left ovariotomy. Universal adhesions. No ascites	Fair	Tumour, solid, 10x7x6½in., many necrotic cysts in ¼ extent of the tumour. Indistinguishable from adeno-carcinoma	In good health in October 1907

SECONDARY CARCINOMA.

Table H.—SCIRRHUS.

	Name, age, &c.	Symptoms. Kind.	Alleged duration.	Physical signs.	Date of operation.
1.	H.W., 39, married, 1 child	Breast removed 3 years previously. Abdominal enlargement: tapped 9 times	7 months	Ascites and small bilateral ovarian tumours	24.8.95
2.	S.K., 41, married, 8 children	Breast removed three months previously. Abdominal enlargement: tapped twice	2 months	Ascites and small bilateral ovarian tumours	13.9.97
		ADENO-CARCINOMATA.			
3.	M.O'D., 16, single	Vomiting. Loss of flesh	2 months	Swellings in the lateral fornices, thought to be tubercular appendage disease	13.6.98
4.	—H., 46, married, 3 children	Flatulence; vomiting; constipation: abdominal distension. Loss of flesh. Difficult micturition	3 months	Hard mass in the left iliac fossa. Distension and visible peristalsis in the upper abdomen	11.4.06
5.	C.H., 48, married	No clinical history	—	Very large abdominal tumour. Uterus lies backwards and underneath the tumour	5.3.02
		COLLOID.			
6.	E.M., 52, married, 6 children, 1 abortion	Tumour. Purgatives caused vomiting and pain. Menopause 5 years ago	2 months	Large abdominal tumour	16.9.99
7.	A.O., 34, single	Tumour. Menses, 7/28, regular	3 months	A mass in the pouch of Douglas. Induration in the cæcum. Several smaller nodules about the abdomen	24.5.06

PRIMARY ADENO-CARCINOMA.

Table I.

—J., 53, widow.	Irritability of the bladder. Fever temperature 103°, and the presence of the tumour. Metrostaxis	2 months	Small abdominal tumour	29.10.00

SARCOMA OF THE OVARIES.

Table J.

S.McC., 29, married, no children	Abdominal enlargement and pain. Loss of flesh. Menses 5/14–21 for 3 months	3 months	Ascites	7.3.99

SOLID TERATOMA OF THE OVARY.

Table K.

—B., 19, single	Abdominal enlargement and emaciation. Six months amenorrhœa	18 months	Ascites and a large, mainly solid, ovarian tumour	.95

Operation.	General condition.	Description of tumour.	After-history.
Ascites. Double ovariotomy	Fair	Tumours, 3x2x2in., and 2x1½x 1½in., mainly solid. Scirrhous carcinoma, secondary to carcinoma mammæ	Death from recurrence, 22.3.99
Ascites. Double ovariotomy	Rather poor	Tumours, 3¼x2x1⅔in., and 3x1½x 1½in., mainly solid. Scirrhous carcinoma, secondary to carcinoma mammæ	Death from recurrence within 6 mos.
Ascites. Double ovariotomy. Malignant stricture in the rectum	Pale, delicate-looking and emaciated	Tumours, 3x2x2½in., and 2x1½x 1½in., mainly solid. Adeno-carcinoma, secondary to malignant disease of the rectum	Intestinal obstruction, 11 days after operation. Colotomy. She gradually became exhausted and died
Small amount of ascites. Double ovariotomy; a mass of malignant growth found in the descending colon	Thin and rather pale	Tumours, 6x3x3½in., and 2½x2x 2in., mainly solid. Adeno-carcinoma, secondary to malignant growth in the colon	Symptoms of intestinal obstruction after operation. Death, from recurrence, 22.8.06
Ascites. Double ovariotomy	—	Tumours, 6½x5x4½in., and 3½x3x 2¾in., mainly solid. Adeno-carcinoma, probably secondary to growth elsewhere	Death, from recurrence, 11.11.99
A large mass of growth in the pelvis, incompletely removed. Bowel involved. Double ovariotomy	Pale. Fairly well nourished	Colloid carcinoma, secondary to growth in the bowel	Death, 12.3.02
Double ovariotomy. Growth incompletely removed, piecemeal. One mass, 4x4in. A mass was left in the cæcum	Thin and anæmic	Colloid carcinoma, secondary to growth in the cæcum	Growth in the cæcum grew rapidly, leading to death, 15.8.06
Right ovariotomy. Universal adhesions, around secondary nodules on the intestines. Ascites	Fair	Tumour, solid, 6x4x3in., an adeno-carcinoma	7.11.00 induration around the uterus. Death from recurrence, 21.2.01
Ascites. Double ovariotomy. Pedicles thick	Much emaciated	Tumours, right 10x8x8in., left 8x5x4½in., mainly solid. A round-celled sarcoma	Ascites recurred. Death, 18.12.99, metastatic cerebral sarcoma. Both broad ligaments infiltrated with growth
Ascites. Ovariotomy and removal of infiltrated omentum	Much emaciated and very ill. Hopeless	Tumour, 10½x8x7in., mainly solid. Omental mass, 7½x5x 4in. A teratoma, containing cartilage, sarcomatous and dermoid structure	Death within 24 hours of operation

A Contribution to the Study of Superficial Papilloma of the Ovary.*

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In the course of an investigation into the pathology of ovarian papillomata, opportunity was afforded to examine and report upon a specimen of primary superficial papilloma. The rarity of the disease, coupled with the interest of the results both from a pathological and clinical standpoint, have influenced the writer in bringing the case forward and in publishing it as a separate note.

The specimen was removed by Professor Briggs in the Hospital for Women, Liverpool. Dr. C. W. Hutt kindly furnished me with the clinical notes.

M.O., aged 47, who had been married 26 years, and had had one child 25 years ago and no miscarriages, was admitted into the Liverpool Hospital for Women, July 2nd, 1907. Menstruation had been regular, 21 to 28 days, the flow lasting 2 to 3 days, and being attended with the passage of clots but with no pain.

The patient had noticed, for the last four months, a swelling of the abdomen, which seemed to keep to the same size. There had been increased loss during the last two menstrual periods. Her general condition, except for some pallor of the mucous membranes and slight œdema of both legs, was good.

Abdominal examination revealed dulness on percussion in both flanks and up to a point 2 in. below the umbilicus in front. A fluid thrill was obtained across the abdomen. Per vaginam the cervix was felt low down, while in the right lateral, the anterior, and the posterior fornices was felt a lump of moderate consistence and irregularity of outline. There was no marked fixation.

Under an anæsthetic, a fibroid uterus was made out, together with an irregular mass in the right lateral fornix.

Upon making an abdominal incision in the middle line, on the day following the patient's admission, a secondary growth was discovered on the peritoneum in the line of the incision. Bowel (small intestine) was adherent to the parietes and had to be separated. A

* Based on a communication read, and accompanied with a lantern demonstration, at a meeting of the North of England Obstetrical and Gynæcological Society, December 20th, 1907.

large mass of papillomatous new growth arising from the right ovary was brought out of the wound; total hysterectomy was performed, with removal of both ovaries and both tubes.

Pathological report.

The specimen consisted of the uterus and both appendages. The cervix was normal. The lumen of the body of the uterus measured an inch and a half in length and an inch in width. The endometrium was thickened; on the left side was a mucous polypus half an inch in length, the upward direction of which apparently resulted from the pressure of the fibroid masses below. The muscular wall was the seat of very numerous, interstitial, hard, white, spherical, fibroid masses; one in the posterior wall was the size of an orange. The right tube possessed an accessory abdominal ostium, situated on its upper border, three-quarters of an inch from its outer end. Both ostia were patent. In the mesosalpinx were two cysts of Kobelt's tubules, each the size of a pea. A psammomatous mass of the same size was attached to the ovarian fimbria.

The ovary was almost completely hidden by a luxuriant papillomatous growth, the size of a Jaffa orange; many of the papillæ were cystic and were distended with clear fluid; a few psammoma bodies, the size of peas, were scattered throughout the growth. On section, the ovary was seen to be of normal size, and apparently in full functional activity. The whole of its external surface, with the exception of the hilum, gave origin to the papillomatous new growth. The left tube and mesosalpinx were normal in size; from the fimbriated extremity hung a hydatid of Morgagni, the size of a haricot-bean. The left ovary presented numerous adhesions on its surface, it was enlarged to the size of a bantam's egg; on section it exhibited numerous follicles distended with altered blood. The capsule was thickened. Several corpora lutea were present.

A microscopical section was taken through the outer pole of the ovary as being a typical portion of the tumour. It showed a normal condition of the ovary, except near the periphery where the stroma assumed a denser form, a form of stroma particularly associated with papilloma of the ovary, whether of the intra-cystic or superficial variety. The normal portion displayed the usual characters of a functionally active ovary. At one portion of the section, the dense stroma near the periphery contained numerous acini lined by a single layer of epithelium, cylindrical in type, varying in length from 14μ to 8·4 , with deeply-staining nuclei. This epithelium resembled in every particular that of the germinal epithelium, which was well seen. Since in many places the germinal epithelium could be seen dipping down into the stroma in the vicinity of these acini, their origin could not be doubted; indeed one may state definitely that the acini were produced by ingrowths of the germinal epithelium. In

addition to the ingrowths just described, the germinal epithelium showed outgrowths or papillæ, each containing a core of dense fibrous stroma. The dense stroma, however, was seen to be undergoing serious degenerative changes in the larger papillæ: whether on account of their pedunculated form, or not, an œdematous change had taken place with, in some instances, almost total destruction of the connective tissue core and the conversion of what were once solid papillæ into pedunculated grape-like masses distended with clear œdematous fluid. These successive changes are well seen in the photomicrographs which accompany this contribution.

It would be a fair inference to suppose that on account of the destruction of its connective tissue core the germinal epithelium also would eventually degenerate and allow of the bursting of the vesicles; in other words that the vesicles would possess a definite life-history culminating in collapse and escape of their liquid œdematous contents into the abdominal cavity. Thus one would suppose the continual formation, growth, and collapse of innumerable vesicles each composed of a core of connective tissue, and surrounded by an epithelium derived from the germinal epithelium.

Disruption of vesicles, by the setting free of masses of epithelium with an underlying connective tissue, would undoubtedly account for the secondary deposits on the peritoneum and omentum, so frequently found in cases of superficial papillomata of the ovary. Secondary deposits, one can realize, would partake of the characteristics of the parent growth, *i.e.*, they would also possess a life-history; but in the case of the parent growth the supply of papillæ is being constantly replenished by processes from the periphery of the ovary; so it is not difficult satisfactorily to account for the eventual total disappearance in the majority of instances of secondary deposits, seeing that they do not possess the means by which the supply can be kept up. That the ascites present would assist in the dissemination of the secondary deposits there can be no doubt.

The microscopic characters of the epithelium surrounding the vesicles and papillæ agree in all respects with those of the epithelium lining ovarian papillomata of the intracystic variety, and with that of the epithelium lining simple follicular cysts of the ovary. The physiological character of this type of epithelium is that of a secreting epithelium, the secretion from which is usually of a limpid, watery consistence, rarely containing mucinous material (pseudo-mucin). These microscopic characters, together with the demonstration of an acinus in one papillary projection, tightly distended with secretion, justify one in stating that the epithelium surrounding the vesicles and papillæ in the case in question, is likewise a secreting epithelium. Whether the germinal epithelium normally secretes a similar fluid or not has never been demonstrated, but that it does so is more than probable. The amount of secreting surface offered by

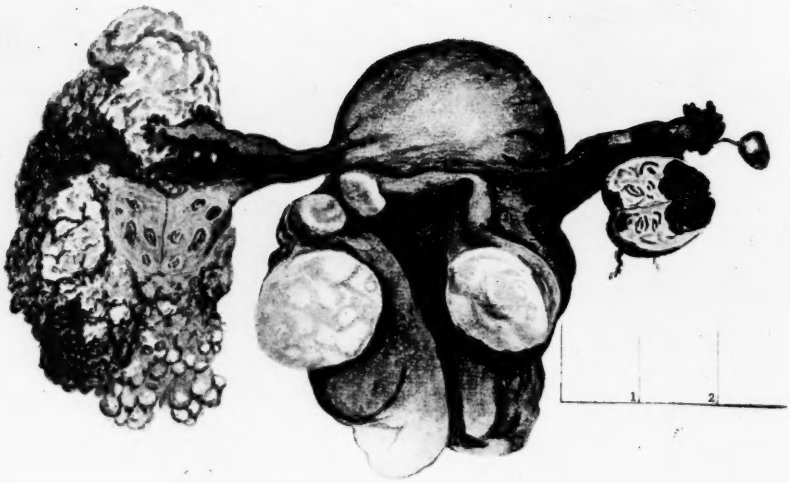

FIG. I.

FIG. II.

the epithelium covering the vesicles and papillæ is altogether of considerable area, and had the tumour been an intra-cystic growth, there would undoubtedly have been produced and accumulated a large amount of fluid. It has been noted that the abdominal cavity contained fluid, but unfortunately at the time of the operation it did not occur to one that it possessed any importance and so no attention was paid to its physical and chemical characters.

A reference to cases of primary superficial papillomata and of intra-cystic ovarian papillomata with extra-cystic growths, reveals the recorded presence of fluid in the abdominal cavity in nearly every instance, and again, one must regretfully state that no examination of the fluids would appear to have been made. There can be no question but that the fluid in the abdominal cavity, both in this case and in the other cases referred to, is the accumulation of the fluid secreted by the epithelium covering the papillary projections. One recognizes that the peritoneal cavity possesses remarkable properties in regard to the absorption of fluid, as for example when the abdomen is flooded with sterilized water following a laparotomy, and it is reasonable to suppose that to a certain extent the same process goes on in the case of the fluid secreted by a papillomatous growth of the ovary. The amount of fluid present in the abdomen in this particular case suggests that either the fluid is incapable of absorption, a state of affairs practically negatived by a reference to the composition of the fluid contained in intra-cystic papillomata, or else the production of fluid by the growth is considerably in excess of the absorption by the peritoneum, and when one considers the large area of secreting surface this appears to be the correct explanation.

Conclusions.

1. Primary superficial papilloma of the ovary is derived from the germinal epithelium and underlying connective tissue stroma.
2. The acini in the periphery of the ovary are derived from ingrowths of the germinal epithelium.
3. The vesicles which form so large a proportion of the papillary projections result from papillæ whose connective tissue cores have undergone œdematous degeneration.
4. The secondary deposits arise from disrupted papillæ; the dissemination of secondary deposits is favoured by ascites.
5. The collection of fluid in the abdomen represents the secretion of the epithelium forming the outer covering of the growth.

Description of Illustrations.

No. 1.—A photograph of a water-colour drawing by G. F. S. Boston, made immediately after removal of the specimen. It illustrates the naked-eye appearances which are described in detail in the text.

No. 2.—A photomicrograph (low power) of a section, by R. H. Mitchell, of the

outer pole of the ovary and growth. It shows the ovarian stroma, dense near the periphery, and the germinal epithelium dipping into the stroma to form acini. Papillæ in all stages of their growth, from the early formation with dense connective tissue core, to the later stages where vacuolation has taken place. In one portion of the field is seen an invagination of epithelium in one papilla, leading to distension with secreted fluid.

No. 3.—A high power photomicrograph, showing the early formation of a papilla. Note the density of the connective tissue core and the character of the epithelial covering, a cylindrical epithelium which secretes the ascitic fluid.

No. 4.—A high power photomicrograph, showing commencing vacuolation of the connective tissue core.

No. 5.—A high power photomicrograph, showing a further stage of vacuolation, leading to the formation of a vesicle containing clear fluid.

No. 6.—A high power photomicrograph, showing a still further stage in vesicular formation, the epithelium on the surface, still retaining a trace of underlying connective tissue stroma. The disruption of a vesicle sets free masses of epithelium and connective tissue, which, by implantation, start secondary growths on the peritoneum.

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FIG. III.

FIG. IV.

FIG. V.

FIG. VI.

SELECT CLINICAL REPORTS.

(Under this heading are recorded, singly or in groups, cases to which a special interest attaches either from their unusual character or from being, in a special sense, typical examples of their class).

I.

Ovarian Dermoid retained two years in Pelvis after Obstructing Labour.*

By Alban Doran, F.R.C.S.

On February 20th, 1904, Dr. E. F. Seager Green, of South Norwood, attended a woman, aged 29, in her third labour. The descent of the head was obstructed by a pelvic tumour. Dr. Green succeeded in pushing the tumour out of the pelvis, and the child was born alive. The patient's first labour (October 1899) ended spontaneously, but the second (January 1901) was lingering, and Dr. Green had reason to believe that the pelvic tumour was, as in the third labour, the cause of delay.

Six weeks after confinement, the patient was troubled with attacks of sharp pain in the right iliac region, so that inflammation of the appendix was suspected. The pain subsided and the patient was sent to me in June 1904. I could not make out any morbid condition above the brim of the pelvis, but I found that the pelvic cavity was occupied by a firm elastic mass which had displaced the uterus forwards. The patient declared that the pain had been confined to a point which she carefully indicated with her finger, that point being McBurney's but no resistance could be felt there on pressure. Contrary to my advice, she declined to undergo an operation, on the ground that she felt perfectly well and free from discomfort.

On February 2, 1906, the patient, then aged 31, applied to me once more. Since Easter, 1905, she had been subject to frequent attacks of abdominal pain, without distension, dysuria, or difficulty in defæcation. These pains were essentially acute, they almost "doubled her up," as she observed, yet always passed away. She informed me that at the age of 21 she had one distinct attack of hæmatemesis, for which she was dieted; this attack was her only illness previous to 1904, and I could not detect any evidence of

* Specimen shown and described at the meeting of the Obstetrical and Gynæcological section of the Royal Society of Medicine of London, November 14th, 1907.

gastric disease. On examination I found that the pelvic cavity was still occupied by the firm elastic mass which I had already noted in the same position in June, 1904. Its upper limits still lay below the pelvic brim, and it had hardly, if at all, increased in size.

I operated on February 13, 1906. The pelvic tumour proved to be a dermoid of the right ovary, weighing 1 lb. 5 oz. It was livid through engorgement of its veins, due to rotation on its pedicle, which was twisted two turns from left to right. The tumour had fallen back behind the uterus and left ovary, both being pushed upwards and forwards. Directly the pedicle was untwisted the lividity disappeared, and I found that the tissues of the pedicle were free from atrophic changes. Strange to say, there were no adhesions excepting a few shreds of soft, recent lymph. The vermiform appendix showed no signs of disease. As the tumour fitted closely into the pelvic cavity, I had to exercise caution in raising it above the brim, lest it should burst. In every other respect the operation was perfectly simple.

I last saw the patient on April 13, 1907, fourteen months after the operation. She was in very good health and quite free from any kind of discomfort. The catamenia were regular. The tumour now belongs to the Museum of the Royal College of Surgeons. It contained about one pound of grease, with hair of a light auburn colour. As usual, the hair in the tumour was much lighter than the hair of the scalp, as may be seen on inspecting the sample of the latter which is mounted with the specimen. Thus a dermoid tumour remained impacted, or all but impacted, in the pelvic cavity for two years without contracting any firm adhesions to adjacent structures. Hence there were no complications, such as infection from the bowel, and the tumour was removed without any difficulty. Although it fitted closely into the pelvic cavity it underwent axial rotation, but the clinical history and the condition of the pedicle seemed to imply that the torsion was partially reduced at the end of each attack. The pedicle being on the right side, it is easy to understand how the symptoms simulated inflammation of the vermiform appendix.

In this case the tumour had obstructed labour, but had not given rise to any pressure symptoms. It fitted quite snugly into the pelvic cavity. At the operation, a long incision was made, not because the tumour was large, for it was clearly of moderate size, but because dense adhesions to the bowel were expected, a dangerous complication, especially in dermoid disease. It was therefore desirable to have plenty of room for the necessary manipulations, with as little risk as possible of the escape of grease, probably infected, into the peritoneal cavity.

II.

A Case of Endothelioma of the Uterus arising in a Fibro-myoma, and associated with Glandular Carcinoma of the Endometrium.*

By Miles H. Phillips, M.B., B.S. (Lond.), F.R.C.S. (Eng.),
Assistant Surgeon to the Jessop Hospital for Women, Sheffield.

The specimen, described in this paper, was originally shown as an instance of the invasion of a submucous fibro-myoma of the uterus by a mixed-celled sarcoma. Professor Beattie, of the University of Sheffield, has since made a very thorough microscopical investigation of the specimen, and has come to the following conclusions:

1. The tumour is an endothelioma arising in the lymphatics of a fibro-myoma.

2. The glands of the endometrium, adjoining the growing edge of the endothelioma, have undergone malignant proliferation, forming an independent columnar-celled carcinoma.

3. The appearances of the growths are, in many places, modified by the presence of inflammatory cells.

I am greatly indebted to him for his assistance and for the pathological report which is subjoined.

Clinical Report.

The patient, 50 years of age, was admitted into Mr. Favell's wards, whilst I was doing his holiday duty, and I have to thank him for permission to report the case.

Though married for ten years she had never been pregnant. She had been a widow for fifteen years.

For nine years she had suffered from increasing menorrhagia with severe hypogastric cramp-like pain during the periods; for fourteen months there had been intermenstrual hæmorrhage with frequent floodings during which the cramp-like pains were always worse.

For several months there had been a constant, very offensive, vaginal discharge. Constant backache and steady loss of flesh and strength were the only other symptoms.

She was thin and anæmic, but not cachectic; her temperature, normal or subnormal in the mornings, reached 100° and 101° at

* Based on a communication brought before a meeting of the North of England Obstetrical and Gynæcological Society, held November 1907, when the specimen was shown.

night. There was a profuse offensive vaginal discharge generally purulent in appearance at times blood-stained and containing small pieces of necrotic material.

The external os was found to be dilated, but not sufficiently to admit the index finger, and the uterus was uniformly enlarged to the size of a four-months' pregnancy. No other tumour could be detected on bimanual examination, but there was considerable tenderness on each side of the uterus.

Suspecting a submucous fibroid, infected and becoming gangrenous, or possibly associated with malignant disease of the endometrium, I explored the uterus three days after admission.

The cervix was easily dilated and, with the gloved finger a large quantity of stinking necrotic material was easily removed; this, from its soft, non-fibrous, brain-like characters, suggested a malignant growth rather than a fibro-myoma. Just above the internal os a firm, rounded tumour, the size of a golf-ball, projected into the uterine cavity. It was now found that the mobility of the uterus was deficient, especially as regardy descent on traction, and, as there was no parametric infiltration, the presence of peritoneal adhesions was suspected.

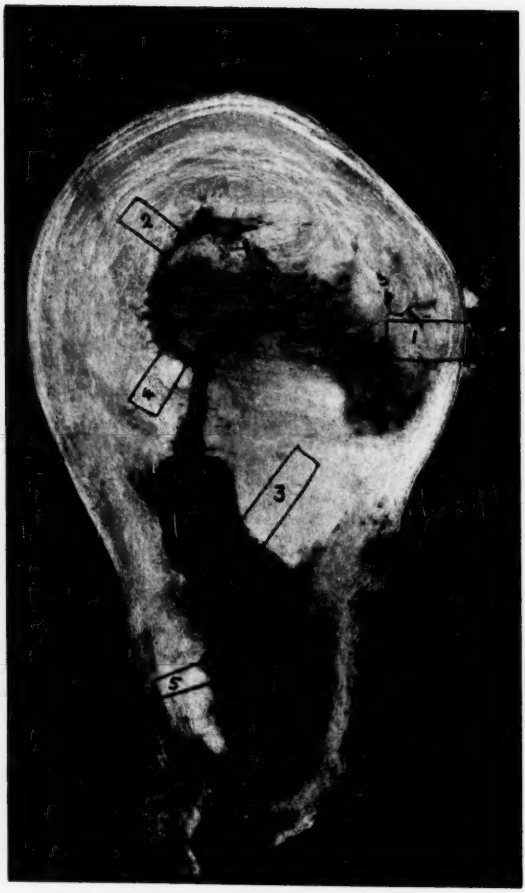
After free irrigation with biniodide solution, the uterine cavity was packed with 5 per cent. formalin gauze. The temperature rose to 103·4° that night, but fell to and remained at normal for thirty-six hours afterwards, and the vaginal discharge was less in amount and not offensive.

The material removed was examined microscopically and reported to be sarcomatous, and so, three days after the exploration, I closed the external os by sutures, cleansed the vagina, opened the abdomen and removed the uterus, entire, with its appendages; both Fallopian tubes were thickened and their ostia closed, and the left was firmly adherent to the pelvic peritoneum and the pelvic colon. I left the vagina open, united the pelvic peritoneum by a purse-string suture, and closed the abdominal wound in three layers without drainage.

The temperature rose to 101° that night, fell to normal next morning, and there remained until the fourth night, when it rose to 101°, never to reach the normal again; for four weeks it fluctuated between 100° and 104°, although some suppuration in the lower part of the abdominal wound was easily controlled, and no inflammatory exudation could be felt in the pelvis, and there were no signs of peritonitis.

In spite of the absence of rigors, septic thrombosis of pelvic veins was suspected, and this suspicion was supported by the occurrence of swelling of the right leg and thigh four weeks after the operation; a few days later the patient suddenly died.

At the autopsy, septic thrombosis of the right external and of both internal iliac veins, and an embolus in the left pulmonary artery



Photograph of the inner surface of the left half of the uterus. The areas marked out and numbered represent the pieces of material removed, from the other half of the tumour, for microscopical examination. The outer end of the left Fallopian tube projects beyond the anterior surface of the uterus.

were found. There was a small collection of grumous pus in the subperitoneal connective tissue around the right pelvic veins, but no peritonitis. There were no secondary growths.

Pathological Report.

Macroscopical. The specimen consists of the left half of the vertically bisected uterus, which, after hardening, and before division, measured 12·75 cm. in length, 7·5 cm. in width, and 7 cm. in its greatest antero-posterior diameter. The anterior wall is greatly thickened by a mass of new growth, which bulges into and almost obliterates the upper part of the uterine cavity. It has also deeply eroded the true fibro-muscular wall to within, at one place, 2·5 mm. of the peritoneal coat. This growth presents two strikingly distinct portions: (*a*) an upper one: in colour greyish, with reddish-brown areas of hæmorrhage, friable, deeply fissured, eroding the uterine wall in front, presenting a ragged necrotic surface to the uterine cavity, and capping (*b*) the lower growth, which is ovoid in shape (3·5x2·5 cm.), yellowish-white, of firm consistence and smoothly rounded on its free surface. The posterior wall is thickened to a less degree, though there is, near its middle point, a considerable projection into the uterine cavity. (It is here that malignant proliferation of the endometrial glands is to be found.) The cervix is slightly elongated, its cavity dilated (by the gauze packing), and its wall thinned, except for an ovoid swelling (2x0·8 cm.) in the upper two-thirds of the posterior wall. The Fallopian tube is tortuous and thickened, its abdominal ostium closed, and its outer fourth distended by pus. The ovary, adherent to the tube, is normal in appearance. (The right appendages presented similar changes.)

Microscopical (Professor Beattie). The tumour is largely composed of irregular masses of cells lying between the muscular and fibrous bundles of the uterus, and of the fibroid in which it seems to have originated. The cells are mainly polyhedral in shape, but there are also numerous rounded and spindle-shaped ones (Section 1). At different areas in the tumour the classes of cells vary considerably. At some places, spindle-shaped cells largely predominate, at other parts polyhedral cells alone are found. In both classes there is a well-defined nucleus, moderately rich in chromatin, but showing quite clearly the nuclear membrane, nuclear network and nucleolus. In their pathological structure the cells more closely resemble the carcinomatous type than the sarcomatous. In their general arrangement they vary at different areas. At some parts they are closely packed together with a very small amount of intercellular supporting tissue, and give no indication of their site of origin; at other parts they are more or less closely packed in irregular spaces, which sometimes show a flattened endothelial lining. In these irregular spaces,

which we consider to be lymphatics, there is no intercullular material, and at places there is a distinct proliferation of the lining endothelium. At certain parts, and especially near the growing margins of the tumour, the cells are arranged in a definitely concentric fashion round both large and small blood-vessels, and this appearance combined with the morphological characters of the cells, and the great amount of growth in lymphatic spaces, leads to the view that the tumour is of the nature of an endothelioma, and that it has arisen by an abnormal proliferation of the endothelial cells lining the lymphatic spaces. (Section 2.) It has spread by direct invasion of the tissues with separation and destruction of both muscle and fibrous bundles. The tumour seems to have arisen in and largely destroyed a uterine fibroid, and from this focus it has spread along the lymphatics to distant parts of the uterus. Many of the lymphatic channels are filled with the tumour cells, and some of them show well-marked proliferation of their lining endothelium. There is very marked invasion of the tumour by inflammatory cells, which are probably secondary to the septic condition of the endometrium, and in some cases there is well-defined necrosis of the tumour cells, the nucleus having lost its capacity for taking up basic dyes, and the cells having become fused into irregular homogeneous masses, which stain with eosin more brightly than the other parts of the tumour. At one part, apparently just at the growing edge of the tumour, on the posterior wall of the uterus, there is a very definite proliferation of glandular structure. This presents the typical appearance of an adeno-carcinoma. The gland spaces are very irregular in shape and size, and show numerous papilliform ingrowths. No definite basement membrane can be detected. They are separating and causing a certain degree of atrophy of the muscle fibres. It is possible that they are abnormal projections of a glandular endometritis, their great and irregular proliferation being due to the irritation of the tumour growth. Their very deep position in the wall is rather against this view, and I am inclined to regard this growth as an independent tumour of the type of a localised columnar-celled carcinoma. The nodule in the posterior cervical wall, is composed of cells similar in character to those of the main tumour; it is evidently a metastatic deposit.

The main tumour is of special interest from the point of view of histological diagnosis. In certain areas the microscopical appearances are practically indistinguishable from those of a mixed-celled sarcoma; while in other parts the structure more closely resembles that of an epithelial or endothelial tumour. As already stated, I am of opinion that the tumour should be placed among the endotheliomata. On this view the variation in histological appearances is not surprising, when we consider the origin of the endothelium of the lymphatics, and the fibrous and muscular tissues. The primitive

mesoblast becomes differentiated into mesothelium and mesenchyme, and it is from the latter that the endothelium of blood-vessels and lymphatics, as well as the fibrous connective tissues, and the unstriped muscular tissues arise.

Thus both sarcomata and endotheliomata take origin from this mesenchyme—the former probably, however, at an earlier and more primitive stage of development. It is not therefore surprising that, in a malignant new growth arising from endothelium, there should be at parts a reversion to the more primitive sarcomatous structure, and this would, I think, be more liable to occur if the original malignant neoplasm were growing in a fibroid tumour, where presumably the various structures would, at any rate in their life history, be less fully and less perfectly developed than the original tissues of the uterus.

Further, this alteration in type of tumour, even of those of distinct embryogenetic origin, has been shown to occur experimentally in mice by Ehrlich, Bashford and others—malignant epithelial tumours having become definite sarcomata.

TECHNICAL MEMORANDA, OPERATIVE AND OTHERWISE.

(Under this heading will be published from time to time notes on points of practical interest in regard to methods of treatment, operative and therapeutic, and on the general management of Obstetrical and Gynæcological cases in hospital and private practice.)

On Some Points on the Technique of Ovariotomy, especially the Advantage of Removing Ovarian Cysts in Bulk.

By J. Bland-Sutton.

In our early days as surgeons we either imitate in a servile fashion the operative methods of some teacher whom we revere, or we are "text-book operators," and follow step by step the instructions set forth in a book on operative surgery. It often requires some courage to discard an old method and adopt a new one if a surgeon is timid and afraid to face the criticisms of his senior colleagues. My first ovariotomy was performed more than twenty years ago, and immediately became a subject of comment because I performed it in the common operating-room, and the patient was conveyed into a general ward instead of being treated in a special room, a condition of things supposed to be essential for success. In a short time I refused to employ the thick clumsy sheet of waterproof material with a hole in the centre which was spread over the patient's abdomen. The sponges employed in the operation were reduced to six instead of the six dozen which were sometimes prepared for me. The director on which the surgeon used to cut through the abdominal wall layer by layer, sometimes consuming a quarter of an hour in the process, I threw away twenty years ago, and the awkward metallic retractors with it. In those days, and with many surgeons to-day, it was usual to employ a complicated machine called the ovarian trocar: I put up with it for several years; when likely to be useful it would not work, and on occasions when the instrument could be made to penetrate a cyst-wall the contents refused to flow through it: I put it aside as a curiosity fifteen years ago, and the formidable-looking cyst-forceps with sharp teeth shared the same fate.

The disuse of the ovariotomy-trocar involved an important modification in technique, namely an increase in length of the abdominal incision to enable me to remove very large tumours entire, and my object in this communication is to state my reasons for this alteration.

The first object of the surgeon in removing ovarian cysts is to

avoid contamination of the peritoneum by the harmful, dirty, and septic stuff they often contain. Later experience teaches me to add another, namely *malignant infection.* Many patients have lost their lives because a surgeon in attempting to withdraw a cyst through a short abdominal incision has, after tapping the cyst, been unable to avoid septic fluid from suppurating cysts, or the grease and hair in dermoids, escaping by the side of the trocar and flowing into the peritoneal cavity. Also in the case of multilocular colloid cysts, the glue-like contents will not flow through the trocar, and the surgeon is recommended to introduce his hand and break down the septa in order to enable him to withdraw the cyst wall from the belly. In such cases the colloid stuff not only escapes into the belly but the operator's hands are thoroughly smeared with it also. In many instances this colloid stuff is quite harmless, but occasionally it is malignant, and I have seen cases in which this accident has been followed by a rapid growth of malignant tissue throughout the abdomen and death has followed within three months of the operation. I have seen a rapid spread of malignant disease of this kind follow the escape of colloid stuff into the belly from the spontaneous perforation of a loculus in a multilocular cyst. My colleagues with whom I have discussed this matter have seen the same thing.

I have had difficulty in convincing surgeons that the long incision does not entail disadvantages to the patients. In the early days of ovariotomy it was believed that the dangers of the operation were directly increased by a free incision, and I shared this opinion for many years; then Lawson Tait threw a glamour over the matter by dexterously performing oöphorectomy through an incision an inch and a half long; but when I began to remove huge uterine fibroids which, from sheer necessity, required long, and often very long, incisions, I soon recognized the great advantage to the operator of a free incision, for it allowed the manipulations within the abdomen to be carried out easily, safely and quickly. Moreover, the long incisions heal rapidly and soundly: it may also seem strange to those who still cling to short incisions to learn that a yielding cicatrix is more common in a short cicatrix than in one involving the whole length of the abdominal wall.

For the last ten years it has been my practice to remove ovarian cysts entire. When the tumour is of moderate dimensions it can be extracted through the usual median subumbilical incision: with large cysts the incision extends above the umbilicus, and when the cyst is very large it will reach from the ensiform cartilage to the pubes.

On one occasion I removed an ovarian cyst from a woman by this method which weighed eighty pounds. Before the operation, as she rested in bed, the prominence of her belly was so great that she could not see the opposite wall of the ward. The morning after the

operation, when the patient awoke, she had to feel about the bed "to find herself."

Only once have I had to deal with an ovarian cyst which could not be extracted entire on account of its size: in this instance a spinster, aged 33 years, had been known to have an abdominal tumour for fifteen years: it had been diagnosed as a uterine fibroid, and its removal regarded as an undesirable proceeding: at length the tumour became so cumbersome that the patient wished for relief, and I accepted the responsibility of removing it, and pointed out that the physical signs presented by the tumour were those usually associated with an ovarian cyst. The long history (fifteen years) was in favour of a cystic uterine fibroid. The tumour, on being exposed by median incision, reaching from the ensiform cartilage to the pubes, could not be extracted through the opening, and as it contained fluid I made a puncture in its wall with the blade of the scalpel, and the nurse caught the escaping chocolate fluid in suitable and convenient receptacles. When two gallons of this fluid had run off the tumour gently slid out of the abdomen, and the pedicle was secured. The opposite ovary contained a cyst the size of a Jaffa orange. On the completion of the operation we examined the tumour. It was a unilocular cyst weighing with its fluid contents seventy pounds, the cyst-wall being covered with large dendritic warts and resembled a huge cauliflower, so that there was every reason to be thankful that the fluid did not leak or escape into the belly. This is the largest papillomatous cyst I have ever seen or read about, and it is remarkable in the long history, for its existence had been recognized fifteen years. In addition, each ovary contained a multilocular dermoid (filled with hair and grease) as big as a Jaffa orange. The patient recovered.

I may briefly describe another instance which recently occurred to me. A patient was sent from India on account of a large abdominal tumour which had recently increased in size. At the operation it needed an incision twelve inches long to expose it. The aspect of the tumour raised my suspicions, for it was congested, plum-coloured and veiled by a sheet of thin adherent omentum. I thought the cyst might contain pus, and therefore handled the thing with extreme care to avoid bursting it. After the operation was over we found the cyst to be filled with pus, and Mr. Frank E. Taylor obtained from the pus a culture of typical *B. typhosus*, and he made this observation the base of a valuable paper on *Typhoid Infection of Ovarian Cysts*, in this JOURNAL, November 1907, p. 367.

Now and then I have removed entire a large parovarian cyst, or a single-chambered ovarian cyst filled with thin fluid, which could have been drawn out through a small incision after tapping; but on many occasions when my assistants have thought I had removed unnecessarily a big cyst entire, they have been surprised when the

tumour was subsequently opened to find it filled with pus, grease or colloid-jelly.

In regard to the closure of these long incisions it may be mentioned that the first requisite for securing an unyielding scar is perfect asepsis: but even the most perfectly healed abdominal scar may yield. Nature in her great operation of uniting the lateral halves of the belly-wall in a median cicatrix—the linea alba—cannot secure a non-yielding scar, it is therefore presumptuous of the surgeon to think he can always ensure it.

There are more than fifty methods known and advocated for the closure of the abdominal incision made in the course of ovariotomy, and the following list of material employed for this purpose is interesting:—Silk, silkworm-gut, catgut, linen thread, horse-hair, silver, iron and platinum wire, and Michel's metal clips. Some surgeons use the metal wires as interrupted buried sutures. Those who are curious in this matter should read Swaffield's brochure, *On the Closure of Laparotomy Wounds as practised in Germany*, 1904.

In Great Britain there is plenty of variety in the methods and material employed for this purpose, but at the present time there is a marked tendency to return to the older and simpler methods.

I have simplified my method in closing these long incisions during the last two years. I no longer unite the peritoneum by a continuous suture, but bring the serous, fascial and muscular layers together by interrupted sutures of carefully sterilized silk sutures (No. 4), absolutely free of any trace of antiseptics, and then bring the skin edges together with a continuous suture of thin silk. *All buried sutures should be inserted and tied with hands protected with thoroughly sterilized gloves.* Catgut I have discarded for many years, it is a dangerous material; none of the ninety and nine enchantments which are supposed to render it germ-free have proved satisfactory.

In passing the interrupted sutures on the supraumbilical portion of these long incisions, it is wise to protect the stomach with a dab. On one occasion I neglected to do this, and in the act of passing a stout needle through the layers it broke, and the rough end of the needle tore a hole in the stomach. The tear was sutured and no harm followed, but it is better to avoid an accident of this kind than to repair a surgical error, although no inconvenience may follow to the patient.

I am a great stickler for simple methods of operating, and the use of few implements. Every instrument discarded, if it be unnecessary, is a great gain. My set of instruments for the procedures which come under the term of abdominal gynæcological operations consist of 12 hæmostatic forceps, two pairs of scissors, dissecting forceps, scalpel, two fenestrated forceps which also serve as sponge-holders,

volsella, six needles—five of which are curved and two of them small enough to be used if bowel requires a suture, and one straight,—three spools of silk (No. 2, 4 and 6), six dabs of various sizes made out of Gamgee-tissue, and rubber gloves.

I have discarded the waterproof abdominal apron for the patient, the director, the trocar, cyst-forceps, peritoneal forceps, crocodile-forceps, the big pedicle-needle, marine sponges, retractors; apparatus for irrigating the abdominal cavity and glass-drainage tubes. The chief and most valuable addition to the implements necessary for success in ovariotomy is, in my opinion, a pair of properly-fitting, and carefully-sterilized rubber gloves.

In studying the details of pelvic operations from books, it should be remembered it is merely the principles that can be explained. There are so many details in every operation that can only be learned from watching, or what is better assisting, a skilful and experienced surgeon in their performance. No man can become a navigator, however carefully he masters the principles of seamanship from books, so no surgeon can acquire the art of operating from merely reading descriptions of surgical operations.

Some Modern Maternity Hospitals, with Plans and Illustrations.

I.

THE CITY OF LONDON LYING-IN HOSPITAL.

By CLEMENT GODSON, M.D., *Consulting Physician to the Hospital.**

IN writing a description of the new City of London Lying-in Hospital, it is perhaps expedient to refer briefly to its history, and the reason for the recent rebuilding.

The Hospital was founded in 1750, and for many years was housed in the premises which lately stood on the site of the present new buildings. At various times additions were made, sanitary works carried out, and such other works executed as were deemed essential for the absolute well-being of the Hospital, and although for a long period the buildings answered their purpose, yet at the best only old-fashioned inadequate premises were secured, requiring great attention, and a very large annual outlay to enable a very limited number of patients to be safely treated. The failure and ultimate condemnation by the County Council of a considerable part of the old premises, by reason of the construction of the Tube railway, running underneath the City Road, causing extensive damage to the walls and foundations, led to a crisis, and after mature deliberation and consideration it was decided that, rather than again patch up an obsolete building (which, it was advised, would entail a very considerable outlay), a new up-to-date Lying-in Hospital, complete in every detail, should be erected, and for this purpose competitive designs for an institution for 50 beds, with six patients in each ward, etc., were obtained from several well-known architects, and on the advice of a professional assessor, the scheme of Messrs. H. H. and M. E. Collins, of 61 Old Broad Street, London, was ultimately accepted.

* (Members of the consulting staff of a hospital have, as a rule, no active duties, but when, in 1881, Dr. Godson succeeded Dr. Greenhalgh at the City of London Lying-in-hospital, it was decided that although his duties were to remain the same as those of his predecessor, the title of the appointment should be changed from that of "Physician" to that of "Consulting Physician." It was understood that the Surgeon-accoucheur for the time being was to send for him, as he had done for Dr. Greenhalgh, in every case of serious illness or labour, and indeed whenever he wanted his advice or assistance. The consequence has been that Dr. Godson has taken a very active part in the actual working of the hospital, from the moment of his appointment up to the present time, a period of twenty-seven years.—Ed.)

The accompanying plans will, I trust, aid in rendering the following description of the new building easy to follow.

Although the site can hardly be considered as particularly desirable for a hospital, yet it was deemed inadvisable, for very material reasons, to attempt to shift the institution. The entire area of the land is only about 20,000 square feet. A considerable part of the western side of this area was already occupied by modern buildings, the upper floors of which were used as nurses' rooms, and the rooms on the ground floor for a general culinary department, etc. These, it was decided, should be retained, being worked into and forming part of the new development. Add to this the fact that certain legal obligations had been entered into, which further curtailed the area of utilization, and it will be readily appreciated that adequately to place a large institution on such a site required very considerable skill. The great height of the Leysian Mission buildings, extending along the north side of the site, and the noisy, dirty thoroughfares (Old Street and the City Road) forming respectively the south and east boundaries, presented difficulties requiring the greatest care to circumvent. The first floor plan clearly demonstrates how the architects have successfully overcome these difficulties.

In designing the new buildings, the architects insisted on simplicity of plan and economy of construction, together with direct light and air to every part, and as it was made a desideratum that the premises should be aseptic throughout, the entire institution has been developed on special lines, centralization being relied on to secure efficiency and economy in administration, with complete supervision.

The wards, of necessity, have received paramount consideration. I and my confrères considered that, although absolute segregation could not, under the circumstances, be afforded to each patient, yet, as the wards of a lying-in hospital are strongly subjected to the ills and influences resulting from poisonous emanations by reason of the continuous decomposition of dead, and the recomposition of new organic matter, isolation and separation of the parts of the hospital should be secured as far as was possible, so as to secure freedom from accident and a minimum of mortality. Hence the architects arranged that each ward for six patients should be completely isolated, including absolute horizontal and vertical disconnexion from any atmospheric communication with any other ward or part of the hospital, thus practically placing the patients in detached buildings, particular care being taken thoroughly to disconnect these buildings from the main corridors and staircases, that by no chance should any infection be carried through one or the other from ward to ward (see plans, and note disconnecting lobbies, cross ventilation, etc.) Wards are not placed on the ground floor, as it was feared that ground air might prejudicially affect them. The walls and floors of all wards are composed of materials non-

absorbent and as nearly impervious as is possible, due regard being had to the necessity for avoiding condensation on the internal surfaces, etc. In "detailing" the wards, only where absolutely necessary are any projections permitted, and then only to the smallest degree, whilst no recesses, panels, or ledges are allowed. Each ward is rounded on plan at each end, having all horizontal and vertical surfaces joined by means of easy curves, there being no angles. To attempt to describe the special aseptic details of doors, windows, fanlights, sills, fireplaces, floors, ceilings, electric installation and fittings, wall coverings, etc., would require too long an article for the present purpose. It should be noted, however, that each ward is so orientated and fenestrated as to receive a considerable amount of sunshine during certain hours of the day, has ample light and external air, and that the wards cannot overlook each other. It was deemed essential that each ward should afford an air space of 2,000 cubic feet per patient, and that the atmosphere should be changed about three times per hour, with a movement of about a foot and a half per second, so as to avoid undue draught. The ventilation of each ward was accordingly so arranged as to effect the desired results. It is local and absolutely independent, capable of being used either as a means of propulsion or extraction as the external atmospheric conditions may at the time demand, the standard of atmospheric purity having been taken to be the external air freed as required of solid organic matter. Complete cross ventilation in all directions is obtained by opening windows and fanlights (see plans), which latter are carried up to the ceiling level and are so arranged as to prevent down draught. Fresh air is introduced into the wards through specially constructed aseptic low pressure steam radiators, having air filters and very short inlet flues, all capable of being easily cleaned in every part. Four controllable radiators are placed in each ward (as indicated on plans) and these, in addition to affording a direct warmed air supply, also discharge warm air through special accessible aseptic tubes under each bed. The vitiated air to the first-floor wards is extracted through hinged gratings situated in the upper part of the ward and connected to glazed flues, extraction being secured by partial vacuum; the glazed vertical accessible flues (no horizontal flues allowed) terminating at the bottom in air chambers capable of being raised to a great heat when required, and at the top in special terminals designed to obviate down draughts and to permit of being cleaned. The vitiated air from the second-floor wards is propelled through hinged gratings in the ward ceilings into flues, and thence into the open; these flues are accessible, and can be augmented in their action by means of electric fans situated in a chamber in the roof of the building. All steam pipes are enamelled externally, are exposed in wards, and are accessible for cleaning; all are vertical, and have special air-locked joints where they pass

through the ward floors; thus preventing any passage of air from floor to floor, and also avoiding the usual unsightly discolouration on walls and ceilings.

In addition to the radiators before referred to, each ward is fitted with a specially designed aseptic open fireplace, having a tile surround, and a raised front hearth, this latter affording a large area of heat radiation. The heating is such that a constant temperature of 65°F. can be maintained in the wards when the external atmosphere is 32°F.

All floors in the institution, except to staff and administrative rooms, are covered with a patent, seamless flooring, having curved junctions with walls.

On the first and second floors, respectively, are four wards, each for six patients. Centrally situated and although invisible from the wards, yet readily accessible therefrom, are the labour wards, aseptic in every detail, adequately lighted, ventilated and heated. Their position is such as to secure quietude, and freedom from the injurious emanations, etc., incidental to the surrounding thoroughfares. These wards are capable of being used either for one or two cases at a time, and are so planned as to avoid draught on the patient; 30 students can be accommodated in each labour ward during a delivery. (Note plans and positions of doors, etc.). The cubic capacity of each ward is about 6,000 cubic feet, and the air can be changed very rapidly directly the delivery is over. Basins with hot and cold water, specially designed so as to be useful not only for ordinary purposes, but also for alternate plunging in hot and cold water to assist in the treatment of suspended animation, lavatories for the doctors, and hot rails for blankets are provided, together with filters, racks, and all necessary surgical accessories. The upper delivery ward is top lighted and free from down draught; it can be used for special operations if required. On each floor is an isolated segregation ward for one patient, so planned that complete air flushing of patient can be resorted to if required. These wards are heated from an open front-hob, fireplace, the ventilation being assisted by ventilating radiation, etc., as before described.

A novel feature in the development of the hospital is the arrangement for washing the infants. On the first and second floors, centrally situated as regards the wards, are rooms in which eight babies can be washed at one time, the architects have specially designed the fittings for these ablutions so as to render them thoroughly aseptic, unbreakable, and free from any projections which, if the child was carelessly handled, might be capable of inflicting injury upon it. The hot and cold water supply, the waste-water apparatus, the heated rails for towels, blankets, etc., are all so placed as to be easily accessible to each nurse. These rooms are so planned, heated and ventilated, that the babies, whilst being washed, are kept free from draughts.

On each ward-floor is a fully fitted ward kitchen, containing gas stove, sink with hot and cold water, filter, dresser, stores, etc., connected by lift with the service room on the ground floor, which latter can be readily reached from the kitchen (the kitchen is part of the old buildings before referred to, and is on a different level from the general ground floor of the new building (see plan as to avoiding steps, etc.). These ward kitchens form the controlling centre for each floor, being fitted with telephones to every part of the building, and thus communication can be had with the matron, doctor, kitchen, engineers, etc. A heated linen room is also placed on each floor, containing amongst other matters a complete equipment for a bed, aired, and ready for immediate use. The sanitary arrangements for each floor are in isolated annexes separated from the approach corridors to wards by cross ventilated necks, carefully heated to prevent back draughts. These apartments are cross ventilated and glass-lined; with the exception of the doors and windows, no joinery is used in them, the glass-lining terminating flush with the frames. All vertical and horizontal junctions are concave. The fittings are all to special details; the water-closets and slop sinks with their water waste-preventers are corbel patterns of aseptic design, and are kept well off the walls and floors, which latter are laid to falls, and so arranged as to be readily swilled out, having special glazed channels with outlets and accessible trapped wastes in same. The sinks are stoneware glazed inside and out, oblong on plan, rounded in every part, and have draining tables of similar material at sides, shaped to fit tops and sides of sinks, all being fixed on glazed corbels and being kept away from walls for cleaning purposes. Towel heaters of special design are fitted. All pipes are vertical and are glazed externally, and all cocks are kept away from walls so as to be readily cleaned in all parts. Special aseptic glazed earthenware cross ventilated receptacles for bed pans are fitted in the lobbies. All soiled linen is sent direct from the ward floors and passed into the open through apertures with weighted self-closing doors in the external walls of the approach corridors. Vertical aseptic galvanized iron open linen shoots conduct the soiled linen to closed troughs on wheels. These are in the yard on the basement level. On the top of the rear part of the buildings facing City Road is situated a complete isolation block, separated horizontally by air space from the main building, and approached either by the external staircase on the north side of the block, or by the lift in the main building which discharges on to an open flat roof, this latter leading to the main or east isolation entrance. The arrangement of this portion of the hospital, including the ward, kitchen, sanitary annex, etc., is clearly demonstrated on the third floor plan; all the details, fittings, etc., are similar to those described for other wards. A bedroom is provided for a nurse who is in telephonic communication with all parts of the building. It may

be as well to mention that pipes of every description, including waste pipes, etc., for this block are independent, and are external to the buildings.

The above description completes a tour of the wards; the remainder of the main block is used for administrative purposes. The main entrance (not for patients) is in the centre of the façade to the City Road, the building being entered through a lobby leading into a spacious hall to which a waiting-room is attached. To the south of this hall is the main staircase, having a specially constructed aseptic safety electric (patients') lift, passing through the centre of the well hole. Both the staircase and the entrance hall are under the surveillance of the porter (see plan). This staircase is carried down to the basement and up to the level of the flat roof on the third floor; it is aseptic in detail, as are also the wrought iron enclosure to said staircase, and the gates to lift, etc. On the first and second floors are emergency doors fitted with panic bolts, opening on to the front balconies, and readily accessible and central for escape should other means fail, (see emergency doors, etc., and external staircases on north and south sides of building). The Secretary's private office is on the south side of the staircase, and opposite to it a strong room has been provided. The board-room faces the main hall. It is thoroughly quiet and well lighted throughout, and has attached to it a cloak-room fitted with lavatories, etc., and water-closets in a disconnected annex. Adjoining the board-room is the matron's office, completely fitted for its special purpose. At the south end of the main corridor is the chapel, and at the north end the Resident Medical Officer's quarters. In the north wing are six bedrooms for nurses, with lavatory and sanitary annex. In the south wing are the dispensary, linen airing room, work room and linen store. Access to the old building is afforded through the corridors in both the north and south wings. On the first floor, reached immediately from the main stairs, are the matron's private apartments, and on the second floor is afforded additional accommodation for nurses in rooms overlooking City Road.

The basement contains a porter's bedroom, boiler-rooms, coal stores, general stores, electric machinery, meter-rooms, mattress store, macintosh washing and storing-room, disinfector, incinerator, linen-sorting space, etc., the several arrangements being clearly indicated on the plan. On the top of the main front building, reached from the flat roof before referred to, are store rooms and room for electric fans and exhausts, so constructed as to avoid any vibration and to prevent sound therefrom penetrating to the wards. It should be noticed that all corridors are direct, and are spacious and well lighted. The entire building is heated by means of radiators, all being accessible in every part for cleaning. The domestic rooms and hall have, in addition, special open fireplaces.

Fire hydrants and fire alarms, with automatic fire index, are fixed throughout the building, the buildings themselves being fire-resisting in construction. The finishings are of the simplest kind, all walls and joinery, other than hardwood, being enamelled, and all ceilings painted; difference in tints and tones being relied on for æsthetic results. All door furniture, window and fanlight fittings, bells, switches, etc., are aseptic in execution, the materials used being non-absorbent.

On the ground floor, entered from Old Street, is a series of special apartments, required by reason of the class of patients* using the hospital, and so planned as not to interfere with the light and air of the main building.

The first room, or so-called "Out-patients' waiting-room," is next to the chapel, is quite severed from the hospital proper, and is entered directly from Old Street through a draught-preventing lobby, the patient presenting credentials, and receiving letters of admission, etc., through the hatchway of the adjoining office, and then leaving the building by passing out directly into the street. This apartment has water-closet accommodation, approached through the open air; a drinking-water fountain is also provided. The heating and ventilating have received careful attention; a large lantern light occupies most of the ceiling space; the walls are glass-lined; the floor is seamless, laid to fall, and readily flushed out. The door in Old Street, to the west of the above, is the In-patients' entrance. The patient is taken direct into the room on the left through its south door, is stripped and washed in the adjoining bathroom, then clothed in hospital attire, and taken through the north door, along the disconnecting neck, and thus into the main building. The patient's own clothes are placed in specially constructed galvanized open iron cradles, on racks, fitted in the room to the right of the entrance (these racks and cradles are readily taken to pieces and can be thoroughly disinfected in whole or in part). The most westerly door to Old Street affords entrance for tradesmen, and for the nurses attending out-patients in their homes. The condition of such nurses, when they return from their cases, is often deplorable; they go at once into their changing-room through its south door, change completely, bathe, and then leave through the north door for their respective apartments. (All clothing left in the changing-room is taken at once to the disinfector.)

Both doors across the corridors, next the last two entrances, can only be opened from the inside, thus ensuring entrance to the main building through the rooms before referred to. To the left of this tradesmen's entrance is the washing-room for treating linen that is

* It must not be forgotten that these patients are from the very poorest and dirtiest districts, and are often verminous and dangerous to a degree.

extra soiled, etc., all washing being done off the premises. All dust, etc., is removed from the hospital through the door opening into the private yard to the west of the building, and from there carted away. Both the disinfector and incinerator are used in the open, the former delivering disinfected goods into the chamber in its rear (see plan). The drainage of the entire institution is as complete as science at present can devise, all underground work being in iron, thoroughly ventilated and automatically flushed, and being accessible for cleaning in every part. All engineering, sanitary, plumbing work, etc., has received most careful attention, and is executed on the most modern principles.

Externally, the building is simple in the extreme, it having been determined by the Building Committee that no money should be expended on mere ornamental detail, the elevations to the main thoroughfares are red brick with red stone dressings, the ground floor to City Road, on account of the dirt from the traffic and passing crowds being relieved by polished red granite. All walls to court-yards are faced with a hard white brick; roofs are covered with green slating, and all flats with asphalte; all undue projections are avoided, and all sills are specially detailed with a view to prevent lodgment of dust and dirt which might be carried into the interior of the buildings by high winds. Proportion and grouping are relied on for elevational effect. Indeed, so much thought, time, trouble, and expense have been bestowed on the hospital by the members of the Building Committee with a desire to render it perfectly and entirely up-to-date, that it is confidently believed that success will result therefrom, and that the hospital will show a minimum of failures either in the form of disease or death.

In the preparation of the foregoing account of the new hospital, I have necessarily been largely indebted to the architect, Mr. Collins, who has spared no pains in his determination to carry out, under circumstances of exceptional difficulty, all the most modern ideas, and who deserves the greatest possible credit for the thoroughness of his work and the anxiety he has shown to give the most careful his work, and the anxiety he has shown to give the most careful consideration to every suggestion of the Building Committee, which include the Consulting Physician, and Consulting Surgeon among its members.

This paper would scarcely be complete without some reference to the general arrangements and routine of the hospital.

The number of beds in the old hospital was 42, and the number of women attended annually during the years 1896 to 1907 varied from 493 in 1896, to 676 in 1907, the latter being the largest number ever attended in one year.

The out-patient department was not instituted until July 1872;

from that date to the end of the year (5 months) there were 143 women delivered in their own homes. In 1907 the numbers had increased to such an extent that 2,772 were attended in the twelve months.

The in-patients are attended by the surgeon-accoucheur; his duties are to attend the hospital whenever required, to visit the sick, and perform such obstetrical and surgical operations as may be necessary. He must reside near the hospital, and consequently this post has almost invariably been filled by a general practitioner of the neighbourhood. The Surgeon-Accoucheur is soon to be replaced by a Resident Medical Officer, who will have charge of the medical administration of the hospital. He will be under the direction of two physicians, whom it is intended, I believe, to elect at the annual General Court of Governors, to be held in February 1908, under the designation of Physicians to In-patients. When this intention is carried out I shall be released from the duties I have been called upon to perform for so many years, though I shall still retain my present title of Consulting Physician to the Hospital. The Consulting Surgeon will also, of course, retain his appointment as a member of the Consulting Staff, though his duties will be somewhat different from before. There has always been a Consulting Surgeon. Up to 1880 the byelaw thus described his duties: "To attend and officiate in all important surgical cases and operations, and at all post mortem examinations, and note his visits in the attendance book." In 1880 the bylaws were altered, and his presence at post mortem examinations was no longer included among his duties. At the same time an alteration was made in the byelaw relating to the duties of the Surgeon-Accoucheur to the effect that "in cases where post mortem examinations are required the inspection shall be conducted by the Surgeon-Accoucheur in the presence of either the Consulting Physician or Consulting Surgeon."

In 1886 the bylaws were again altered as regards the duties of the Surgeon-Accoucheur: "In the event of the death of a patient, when a post mortem examination is deemed advisable, he shall call in a medical man to perform the same at a fee not exceeding one guinea. He shall himself be present at the inspection, having previously given sufficient notice to the Consulting Physician and Consulting Surgeon that they may also be in attendance should they think fit."

It will thus be seen that the duties of both Consulting Physician and Consulting Surgeon have hitherto been of an active character.

In the old institution the nursing staff consisted of the Matron and two salaried nurses, one for night and the other for day, and there were about 12 pupil midwives and 18 pupil nurses, all resident in the hospital. The Matron and salaried nurses attended all the deliveries, sending for the Surgeon-Accoucheur in cases of difficulty.

The pupils were present, but only as lookers-on. They were supposed, at that early stage of their training, to be learning monthly nursing. After this, they were sent into the Out-patient department, and attended labours under the superintendence of the district midwife.

It is proposed that in the new hospital qualified medical practitioners and medical students shall be permitted to attend the midwifery practice of the hospital for educational purposes.

The Matron will have under her a sister for the labour-rooms, and another for the wards, who will have three or four staff-nurses under her. Since the regulations of the Central Midwives Board have required that every candidate for a Midwives' certificate shall have personally examined and delivered twenty lying-in women, ten to fifteen cases have been provided for each pupil midwife in the hospital, before she is sent out into the district.

The Out-patient department consists of:

(*a*) Patients attended at their own homes by the resident out-door midwife and pupils of the hospital. In 1907 these patients numbered 901.

(*b*) Patients attended at their own homes by the district midwives, of whom there are eight. In 1907 these patients numbered 1871. In cases of difficulty the district midwives send for one of the district surgeons, eleven in number.

Those of my readers who are interested in the subject will find an account of the ravages of puerperal fever in the old City of London Lying-in Hospital before the introduction of antiseptics,* and of the gradual improvement since, in my Valedictory Address on "Antiseptic Midwifery," delivered before the British Gynæcological Society on January 14th, 1897, and published in the *Lancet* of January 23rd in the same year. The battle against preventable disease there described has been fought and won, and the new hospital has now but to keep up under more favourable conditions the aseptic reputation that the old one has already gained.

* "In 1870, when [as surgeon-accoucheur] I took over the medical charge, the patients were dying in the proportion of 1 in 19 . . . " whereas "in the last five years [1892—96], amongst 2,392 deliversies there has been no death in which septicæmia could have borne any part . . ."—*Lancet*, January 23rd, 1897.

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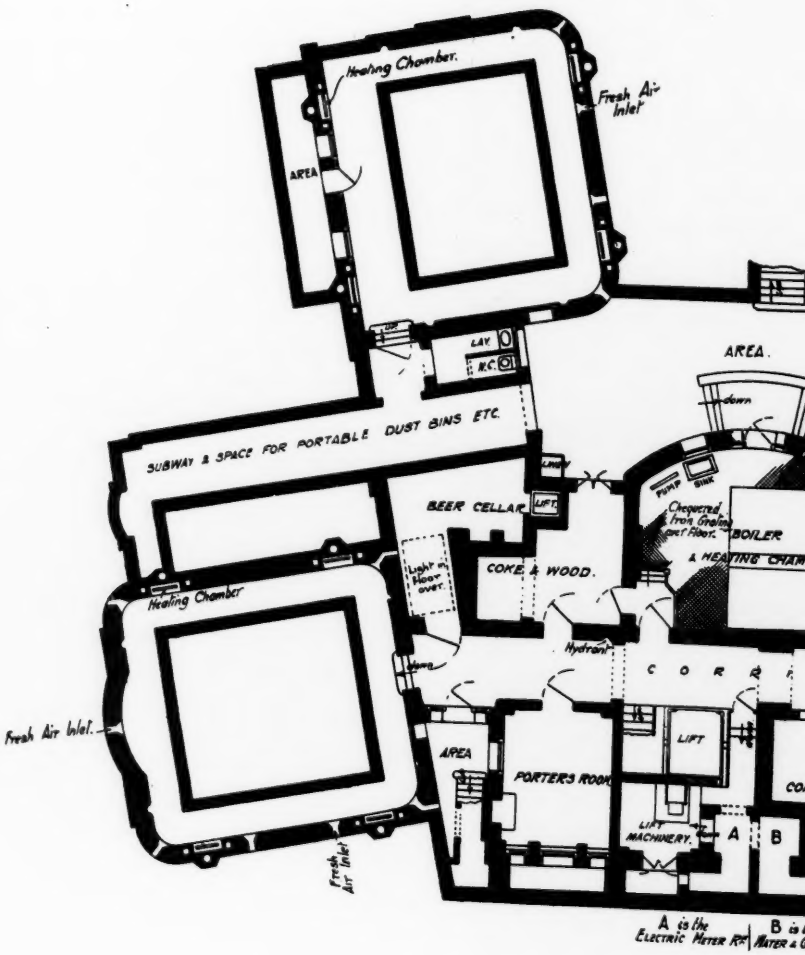

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Lying-in Hospital.

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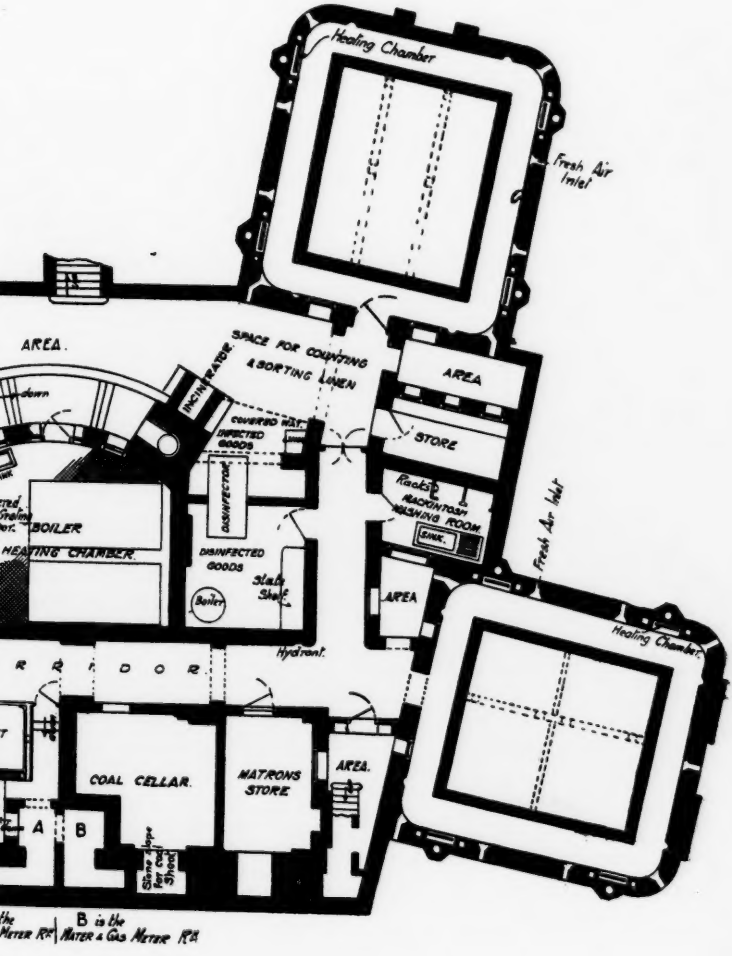

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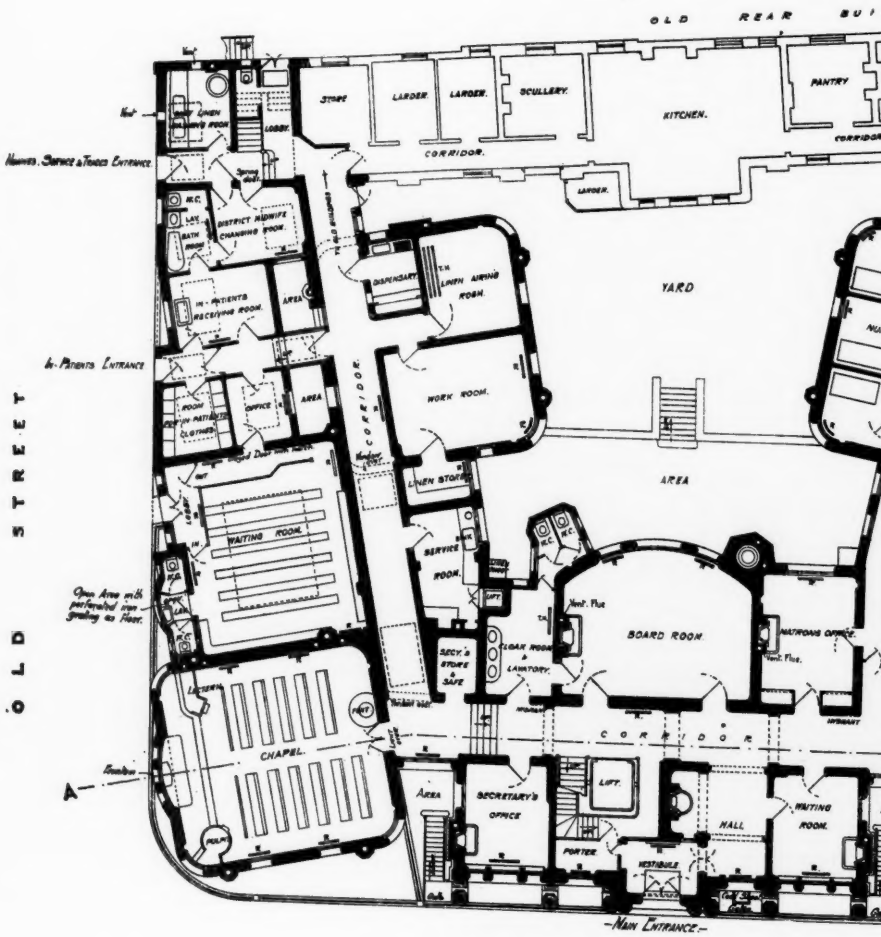
— CITY ROAD



C I T Y R O A D

— GROUND FLOOR PLAN. —

Lying-in Hospital.

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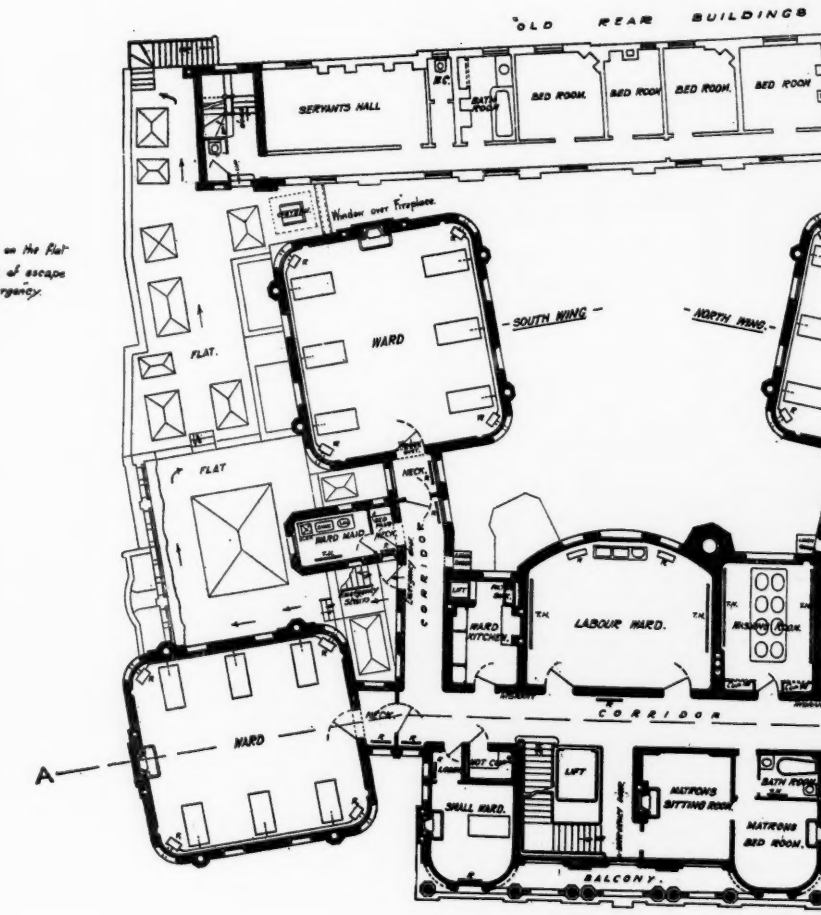

The arrows shown on the Flat indicate direction of escape in case of emergency.

The Second Floor Plan is similar except for Matron's Sitting Room & Bed Room — vide ltd.

—FIRST FLOOR PLAN—

n Lying-in Hospital.

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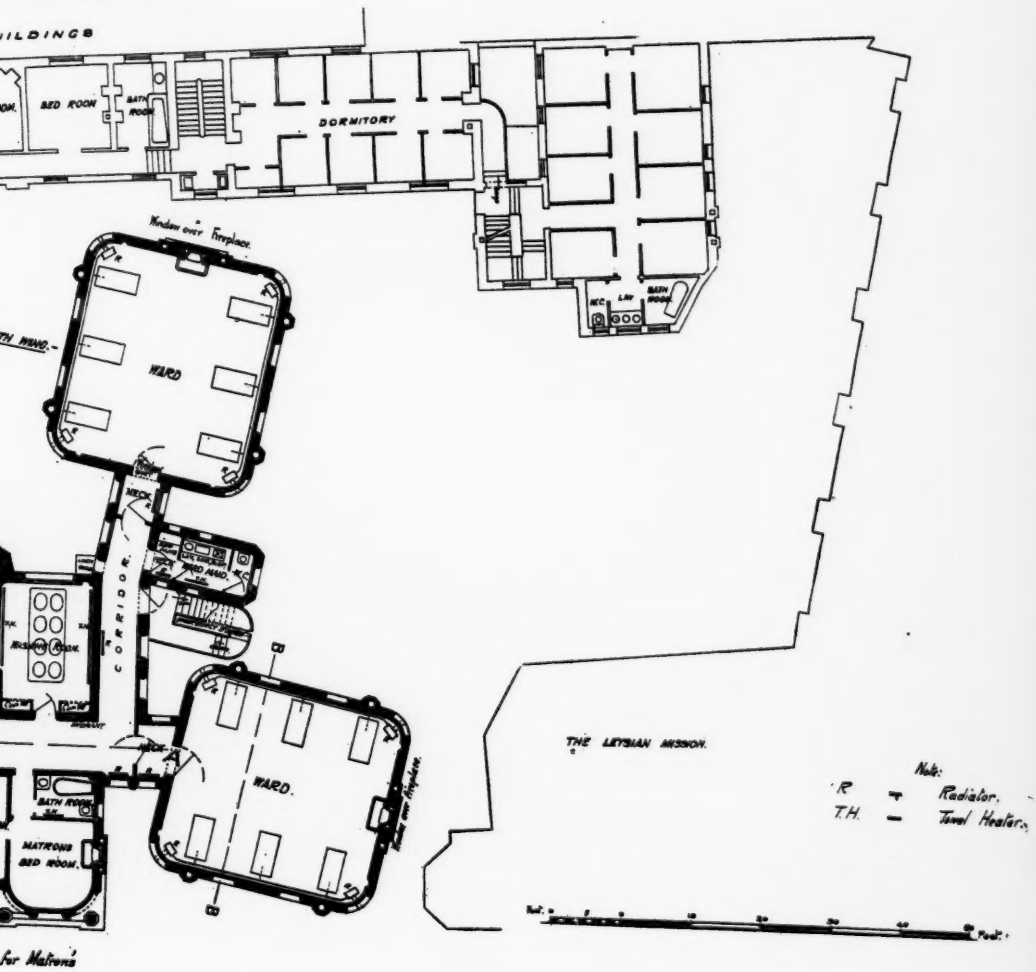

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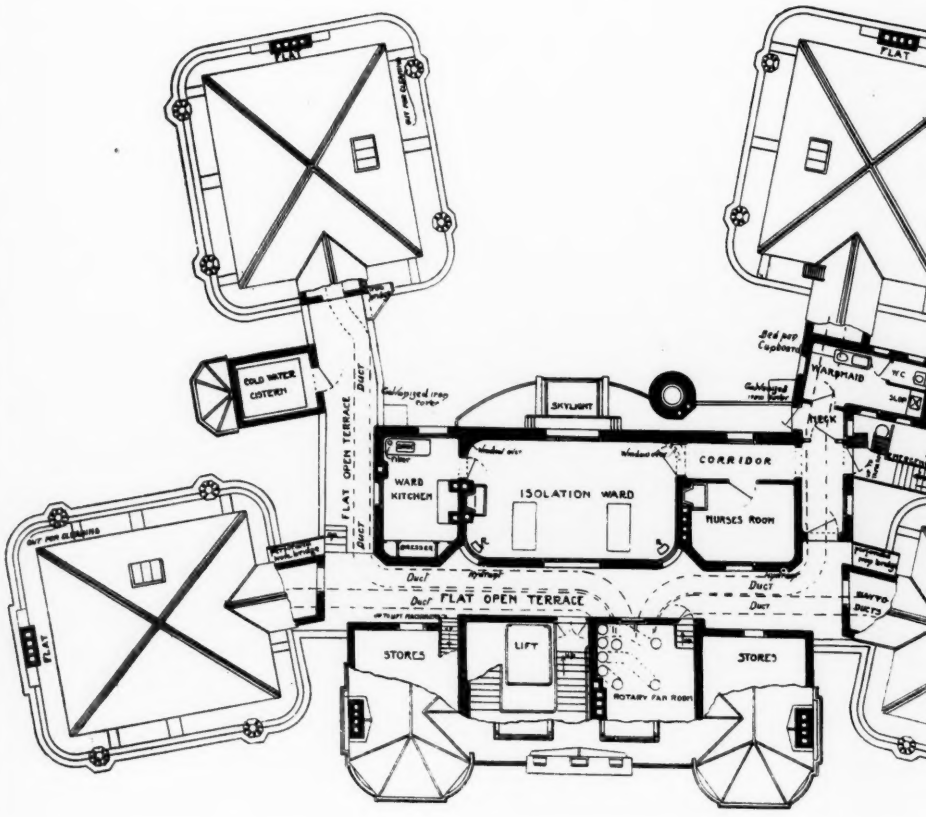

— THIRD FLOOR PLAN —

ISOLATION BLOCK

Scale of

Lying-in Hospital.

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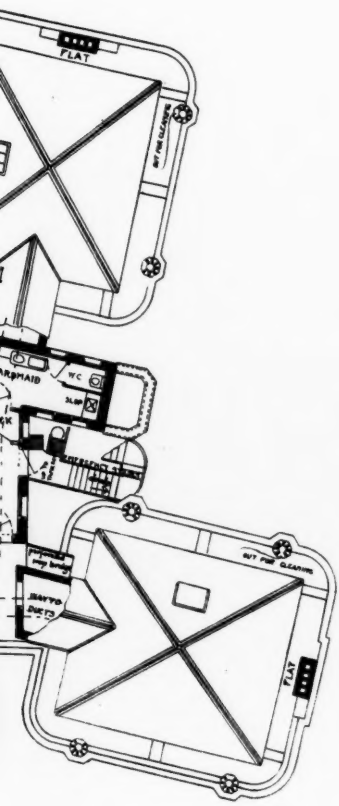
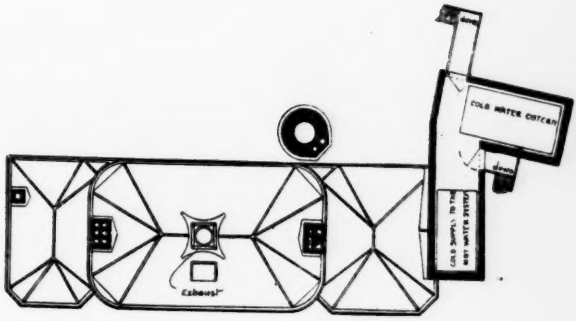


Note – R = Radiator



– ROOF PLAN –

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— CITY ROAD · I

— ELEVATION TO CI

Lying-in Hospital.

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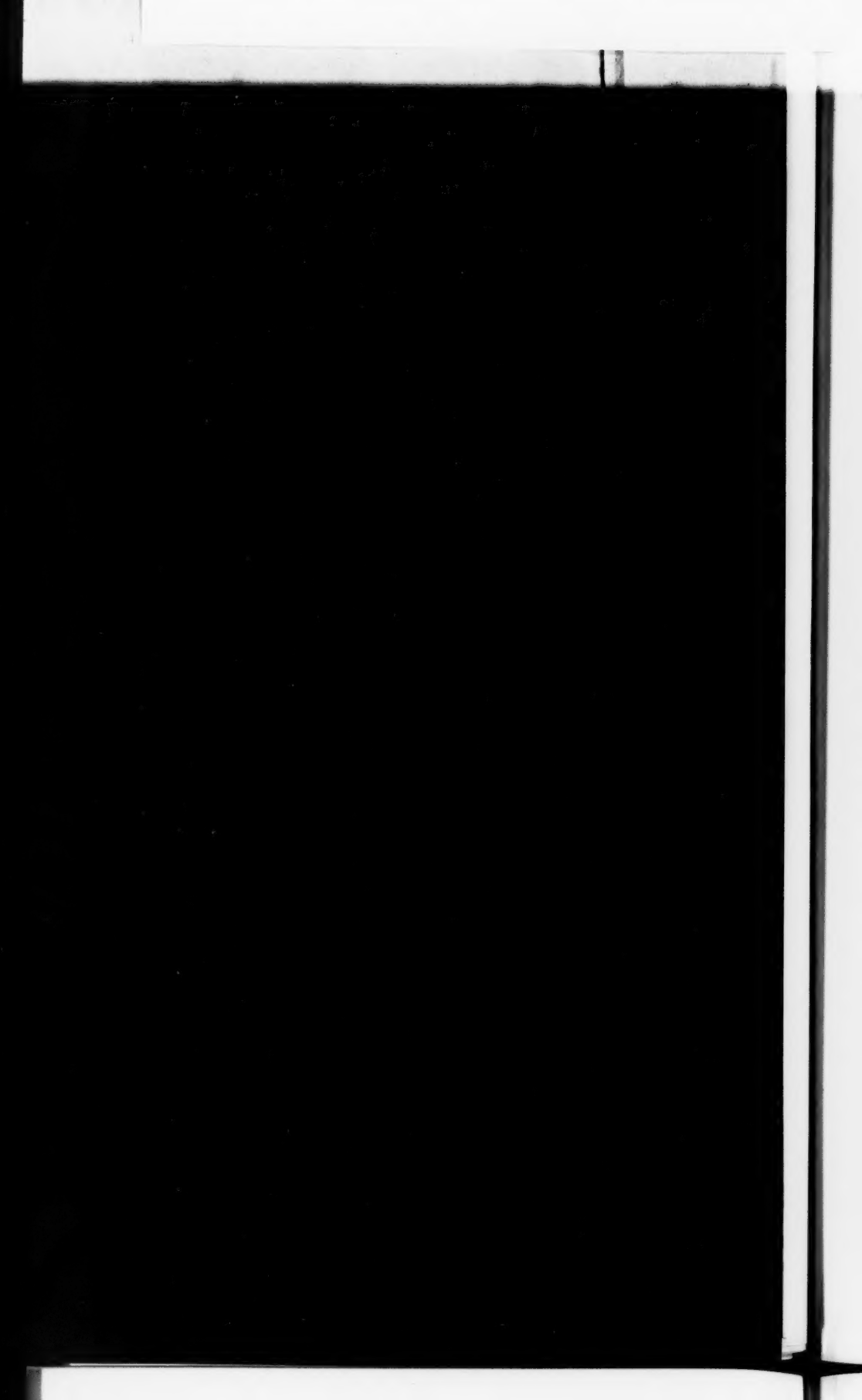
— SECTION ON LINE B B.—



REVIEW OF CURRENT LITERATURE.

Chlorosis a specific disease and iron its specific cure.

F. W. WARFWINGE (*Münchener m. Wchnschr.*, 1907, No. 51, p. 2542), director of the largest hospital in Stockholm, in the 24 years 1879 to 1903, had 683 cases of chlorosis under his observation, and from his extensive experience formulates the following conclusions: Chlorosis should not be included in the indefinite term anæmia, but considered as an absolutely specific form of disease. It is marked by its spontaneous occurrence without any recognizable cause. Etiologically, one must admit its complete independence from any of the factors in anæmia; from want of good food, and other anti-hygenic conditions; from impaired digestion; from disorders of the nervous system; from heredity, and allied conditions; there is no reason to connect chlorosis with infantile conditions of the circulatory system or genital organs. The type of the disease is most impressive; its essential entity is obscure, but must consist in some alteration in the blood in which deficient new formation of the red-blood corpuscles prevails to some extent, but in which the chief point is that its own constitution is so changed that it is unable to assimilate in sufficient quantity the hæmoglobin so indispensable for its proper function. Several circumstances support the idea that the impediment to such assimilation is a poison which diminishes the catalytic property of the protoplasm of the red corpuscles that is responsible for the formation of hæmoglobin out of the hæmatogenous materials of the food. Many circumstances suggest that chlorosis is an infectious disease accompanied by the formation of toxic material (its typical, sometimes mildly feverish course, its inclination to relapse, its epidemic occurrence, and so forth). In regard to treatment dietetic measures may act as adjuvants, but are in themselves useless. Iron alone has a beneficial action, and that both brilliantly and specifically effective. That its effect is not manifested locally, in the alimentary canal, is proved that when administered hypodermically, even in doses of about $\frac{1}{5}$ of the ordinary amount, its action is just as rapid and sure. The action of iron preparations presupposes, then, absorption. In chlorosis, the specific action of inorganic preparations of iron is the same as that of organic ones, which, like albuminate of iron, react to the ordinary tests for the metal. Such compounds as ferrocyanide of potash, on the other hand, and hæmogloblin, hæmatin, hæmol, etc., on the other, in which the metal is so fixed that they give no reaction to the tests, are absolutely ineffectual. Chlorosis for its cure demands inorganic or organic preparations of iron, which can be more or less completely decomposed in the blood and other juices of the system, so that (as against chemical reagents) the metal can exercise its full effect. One must assume, for many reasons, that the therapeutic iron is not assimilated, does not penetrate the hæmoglobin molecule, and so supply the deficiency. Experiments made on animals to prove the contrary are very contradictory; moreover, the anæmia induced artificially in the animals is not chlorosis. If iron in drug form were assimilated, its use in chlorosis might be abandoned, for the iron contained in the food would surely be much more adapted to form hæmoglobin. Nor can one suppose that the iron acts by stimulating the blood-forming cells of the bony marrow, since no pathological lesions have ever been discovered in the marrow of chlorotic patients. One may therefore suppose that the process of formation of hæmoglobin, impeded in chlorosis, is greatly promoted by the ions of iron set free by the decomposition of the iron drugs in the juices of the organism, inasmuch as those ions as catalysators accelerate the destruction of the

poisonous matter which probably exists in the blood in chlorosis and hinders the formation of hæmoglobin, and this in proportion to the concentration of the ions. For the quick and sure cure of chlorosis, large doses of iron are essential, especially as much of that ingested is not absorbed. The treatment must be continued until the blood is absolutely normal, or for at least six weeks. The author gives curves of the counts of red corpuscles and of the amount of hæmoglobin in various forms of anæmia, and especially in chlorosis, a number illustrating the effects of various preparations of iron, and also full consideration to the literature of chlorosis and its treatment.

Pruritus Vulvæ, Kraurosis, Leucoplakia and Malignant Disease.

A. W. Russell (*Glasgow Med. Journ.*, December 1907), attributes pruritus to discharges that affect the vulva in passing it or to sources of irritation in the vulva itself. Among the former the sugary urine of diabetes and leucorrhœa deserve especial attention, among the latter vulvitis, skin eruptions, caruncles and parasitic diseases. Though pruritus is a symptom, not a disease, it is generally, before diagnosis, accompanied by an inflammatory hyperplasia of the skin which, if the condition is not arrested by treatment, soon passes into an atrophy and more serious changes of structure. In a considerable proportion of cases the pruritus may be relieved by treatment on the following lines: (1) physiological rest to the parts; (2) thorough cleanliness; (3) the care of uterine, vaginal or intestinal trouble; (4) local applications to restore the tissues of the vulva to as nearly as possible a normal condition; and (5) excision of the affected area before serious structural, perhaps malignant, changes have occurred. Too much time should not be lost in palliative treatment before the radical treatment by complete excision is adopted, for in a considerable number of cases malignant disease attacks the part, and the neighbouring glands are affected. But besides ordinary epithelioma there is another troublesome development, first described by Breisky as kraurosis vulvæ, which is preceded generally by persistent pruritus. Of this affection Russell reports one marked case cured by radical excision, and one not so pronounced successfully relieved by palliative treatment. (Cf. *ante*, p. 42.)

Formation of an Artificial Vagina by Intestinal Transplantation.

J. F. Baldwin (*Amer. Journ. Obstet.*, 1907, vol. lvi, p. 636), reports the following case: A patient, aged 28, had been delivered by forceps of her first child, and following the delivery there had been complete sloughing of all the vaginal tissues, and the canal left was merely a sinus, so small and tortuous, that it could not be followed by the finest probe. The patient menstruated regularly, but the function was accompanied by considerable pain. The operation was begun by the perineal route. The tissues were difficult to separate, owing to the amount of cicatrization which had taken place, but after some dissection a bed was made for the new vagina. The abdomen was then opened. Some pelvic adhesions complicated the case and prevented the use of the sigmoid flexure to form the new vagina. A double hæmatosalpinx was present, and both tubes and one ovary were removed. A loop of small intestine was then detached from the rest of the bowel, the continuity of which was restored with the help of a Murphy's button. The open ends of the loop were sewn up, and the closed end was drawn down through the previously prepared channel to the vulva. Owing to the adhesions present, and the fixity of the uterus, it was not possible to introduce the cervix into the intestine, and the uterus was therefore removed. The lower loop of bowel was opened and stitched to the vulva. There was then a double vagina. The septum between the two was cut through ten days later. The operation was entirely successful.

C. Nepean Longridge.

Primary Carcinoma of the Female Urethra.

Y. KARAKI, Tokio (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lxi, Ht. 1), discusses the literature and tabulates the published cases, and reports the following case of his own. A woman of 45 had sudden retention of urine, relieved by a catheter, which was passed with difficulty and caused much pain and bleeding. The whole urethra from the external meatus to the neck of the bladder was involved in a carcinomatous growth, which had widely infiltrated the peri-urethral tissues. The external meatus was covered with pea-shaped prominences. Operation was performed and the disease widely excised. The resulting opening in the bladder was sutured to the vulva at the site of the original external meatus. The patient recovered with incontinence of urine, but had no recurrence for 9 months. The tumour was a squamous epithelioma.

There are two forms of carcinoma involving the urethra: (1) vulvo-urethral, arising at or about the external meatus, and (2) true urethral, arising in the urethral canal. Ehrendorfer (*Archiv f. Gynäkol.*, Bd. lviii) collected all the published cases up to 1899, 28 in number, of which 21 were vulvo-urethral and 6 urethral. To these Karaki has now added 29, making a total of 57, of which 34 are vulvo-urethral and 19 true urethral. The inguinal glands were involved in only 6 of Karaki's 29 cases.

The paper contains a full discussion of symptoms, diagnosis, and pathology of this condition. EARDLEY HOLLAND.

The Recognition and Treatment of Urogenital Tuberculosis by means of Koch's Tuberculin Preparation.

R. BIRNBAUM, Göttingen (*Zentralb. f. Gynäkol.*, No. 39).—On the basis of experience in the Göttingen Klinik, Birnbaum advocates an extensive use of tuberculin for diagnostic and therapeutic purposes. In respect of the former, this means failed only once in about one hundred cases in which it was employed during four and a half years. It was used for treatment in 23 cases, with the following results: of 7 cases of peritoneal tuberculosis with ascites, 3 were cured; 7 cases without ascites, 5 cured; 5 of tuberculous adnexal disease, 3 cured; 4 of vesical tuberculosis, 1 cured. He attaches much importance to intermission of the treatment (*Etappenbehandlung*), that is to say, omitting the injections for some months and then resuming them.

LENHARTZ, Hamburg (*Münchener m. Wchnschr.*, 1907. No. 42, S. 2,112), also advocates the use of tuberculin in disease of the urogenital system. SCHERER, of Bombay (*ibidem*), has employed it with the best results in four pregnant women, apparently for laryngeal tuberculosis.

Renal Tuberculosis curable by Internal Treatment.

V. PÉCHÈRE, Brussels (*Journal m. de Bruxelles*, 1907, September 12), admits that advanced tuberculosis of the kidney makes nephrectomy a necessity yet, when the affection is detected early enough, operation may be avoided. It is not unusual for tuberculosis of the kidney, as of other organs, to undergo spontaneous cure, and it frequently happens that at an autopsy tubercle bacilli are found in the kidney, without any true formation of tubercle, so that one may say that, though infection of the kidney by the tubercle bacillus is common enough, true renal tuberculosis (suppuration cavities, etc.) is comparatively rare. This depends on the sclerotic reaction of the tissues which is followed by cure. Péchère has previously published several cases in which the urine at one time contained tubercle bacilli, and was afterwards free from them. The important point, therefore, is to recognize and treat the disease before the renal tissues have undergone change. (This paper is interesting in connexion with Mr. Godlee's recent Bradshaw lecture.)

The use of Chloride of Zinc Solution in Gynæcology.

Hofmeier (*Münchener m. Wchnschr.*, 1907, No. 48, S. 2370), in an address to the Franconian Obstetric and Gynæcological Society, referred to a case he had published 12 years ago, in which a young woman of 20 received an intrauterine injection of 2 c.cm. of a 50 per cent. solution of chloride of zinc without previous dilatation of the cervix. She was immediately attacked with most violent pain and increasing collapse, and died within 12 hours. The obduction disclosed a somewhat intense peritonitis, extensive caustic effects on the uterine mucosa, not affecting the uterine wall nor the mucosa of the tubes. The caustic action of the chloride of zinc alone did not account for the rapid death, in which it seemed direct intoxication must have been a factor, but at that time he had not been able to get any information of the toxic action of zinc chloride except when taken into the stomach.

Hofmeier had recently been consulted as an expert in a similar case: An absolutely healthy, strong young woman, 22 years of age, after the introduction of a considerable quantity of chloride of zinc into her vagina, without any trauma, and without the passage of the solution into the uterus, died in 22 hours under severe symptoms of intoxication. The amount of zinc recovered from the abdominal viscera was so great, corresponding to 3·21 c.cm. of a 50 per cent. solution of the chloride, that a remarkably intense absorption upon the vagina must have taken place, while the caustic action was not sufficient to explain the rapid death. This case led Hofmeier to make further enquiries, and his colleague Straub informed him that he had proved by experiment that in the presence of zinc chloride, and an excess also of serum, certain zinc albuminate compounds may be formed which are easily absorbed and are intensely poisonous. On Straub's advice, Hofmeier repeated the experiments and confirmed the results.

The symptoms under which the patients above mentioned died were undoubtedly those of acute intoxication, and it is an urgent question whether the use of a 50 per cent. solution of zinc chloride in gynæcology is at all justifiable. At all events it is evident to what disasters the employment of such heroic, and in Hofmeier's opinion unnecessary, means may lead in the hands of inexperienced persons. The drug is not only commonly employed in endometritis but also in the treatment of inoperable carcinoma after the use of the curette; Blau has recently reported the expulsion of a carcinomatous uterus complete after plugging for 14 hours with 30 per cent. zinc chloride, so that the use of this caustic is very perilous because of its undetermined deep effect, and, except for a strictly local effect, should be abandoned. Its caustic action can be obtained by less dangerous drugs, such as formalin or a concentrated (20 per cent.) solution of carbolic acid in alcohol, which latter Hofmeier has used almost exclusively for many years. Rielander has shown that alcoholic solutions not only penetrate the deep tissues more quickly and effectively, but are more rapidly and extensively diffused superficially.

The Operative treatment of Inversio Uteri Puerperalis Inveterata.

E. Gross, Prague (*Zentralb. f. Gynäkol.*, 1907, No. 46, S. 1443), reports a case of puerperal inversion developed after delivery by forceps, in a primipara aged 23, during the removal of the placenta by Crede's method with slight traction on the cord. Manual reposition was apparently easily effected and the vagina was plugged, but when the plugging was renewed the uterus was found to be inverted again, and reposition could not be carried out. Six months afterwards the patient was operated on: Küstner's colpocœliotomy was first tried but failed on account of adhesions: reinversion, however, was effected by abdominal section, separation of the adhesions, and division of the posterior uterine wall, and the woman recovered. Gross attributes the inversion in this case to atony of the uterus, and for the treatment of inveterate displacements of the kind advocates (1) careful attempts at reposition without the

knife; (2) Küstner's colpocœliotomy; (3) laparotomy if there are adhesions; and, finally, in cases of uncontrollable hæmorrhage in one of these operations, of septic infection or of perforation of the uterus; (4) total hysterectomy.

The Treatment of Patients before and after Laparotomy

R. v. Hippel, Kaiserswerth (*Zentralb. f. Chirurgie*, 1907, No. 46), concurs with Vogel in recommending physostigmin in the after treatment of laparotomy, and has witnessed its good effect in numerous cases. He injects 1 mg. immediately after the operation, and repeats the dose every three hours until movements occur in the intestines (cutting sensations), a tube is then introduced into the bowel and left *in situ* for about an hour to allow the gases to escape. On the day after the operation a stool is obtained generally without any trouble by a clyster of glycerine. The advantages of the physostigmin, of which from 2 to 4 injections are usually required, are the avoidance of adhesions (ileus) from the early excitation of peristalsis, the prevention of post-operative meteorism, and the possibility of allowing the patient plentiful nourishment earlier. Forced purgation before laparotomy he considers injurious, as tending to cause intestinal atony.

Thrombosis and Embolism after Gynæcological Operations.

Zurhelle, Bonn (*Muenchener m. Wchnschr.*, 1907, S. 2007), at the recent meeting of Naturalists and Physicians at Dresden, pointed out that thromboses and emboli come much more frequently under the notice of gynæcologists than under that of surgeons. They are especially frequent after operations for myomata, indeed thrombosis occurred after 2·75 per cent. of all the operations for myoma in the Bonn klinik. The reason for this may be found in the disturbances of the circulatory system which are particularly common in women suffering from such tumours; as Winter remarks, fatty degeneration and brown atrophy of the heart are to be dreaded, whenever great loss of blood has affected the general system, especially when long persistent hæmorrhage has led to chronic anæmia. These changes in the heart are seldom seen in carcinomatous patients.

At Bonn thrombosis occurred much more commonly in patients who were well off, who were subjected to no bodily strain or exercise, and who had far less resisting power when operated on, than women of the working classes. Thromboses in cases of malignant tumours are easily explained; on the other hand, for those after operations for uterine displacements and adnexal tumours, such causes may be assigned as wound infection, some existing cardiac anomaly, anæmia, refrigeration of the open abdominal cavity, impairment of the heart by the narcosis, obstruction to the return blood by excessively tight bandaging, or finally the Trendelenburg position. Three sorts of thromboses may be distinguished: (1) Thromboses of the pelvic veins which are most apt to lead to pulmonary embolism, as these veins have no valves. (2) Thromboses of the deep veins of the thigh, usually due to purely mechanical causes in women with weak hearts, which also may lead to pulmonary embolism. (3) Thrombosis of the vena saphena which does not cause pulmonary embolism.

According to Mahler, while the temperature may remain normal, the gradual acceleration of the pulse may exhibit a curve typical of thrombosis. This sign of Mahler's, however, is much overated, and at Bonn could not be confirmed. On the other hand, when thrombosis is suspected, measuring the circumference of the extremities is undoubtedly important. In thrombosis of the pelvic veins, which is so extremely dangerous, the bladder cannot be kept at rest. Attention to the general condition of the system before operation is particularly important (strophanthus, saline infusions), but the preparation of the patient should be as little impoverishing as possible, no starving, no powerful purgatives, no prolonged washing of the field

of operation during the narcosis; the operation itself should be performed quickly with as little loss of blood and as little loss of bodily heat as possible (small abdominal incision). The patient, after the operation, should have the shoulders raised and change the position occasionally; breathing exercises and active and passive movements of the arms and legs are very important. Finally Zurhelle advocated getting the patient out of bed very soon, on the second, third, or fourth day after the operation.

KROENIG, thought that most cases of thrombosis affected the veins of the thigh, and that compared with them the pelvic veins were of no account. The primary cause, however, was not clotting but interference with the forward movement of the blood; clotting was merely secondary when the blood stream had become much retarded. Mahler's sign is important, but is evidence of cardiac weakness not that a thrombosis has formed. The best help in preventing stagnation of the blood is getting the patient up soon, and Kroenig often allows his patients up 24 hours after operation or 8 after labour. The patient must not be enfeebled before the operation, and chloroform narcosis should be as far as possible avoided (*ante*, p. 477). Thromboses occur in bedridden myomatous patients without any operation. Of course, once a thrombosis has formed, getting the patient up will increase the danger of embolism, but serious cases of myoma should, purely to avoid thrombosis, be got up on the first, second or third day; since he had adopted this practice, he had not had a single instance of thrombosis of the femoral veins.

LEOPOLD, Dresden, considered that thromboses of the veins of the thigh, or of those of the pelvis, might be detected by the climbing pulse before there was any swelling of the legs. When thrombosis has occurred, the greatest care should be taken to ensure complete rest and avoid any excitement (no visitors) and camphor should be given to fortify the action of the heart.

A rare case of Calcification of the Walls of the Uterus—especially around the cavity.

M. BARBERIO, Naples (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lx, Ht. 3).—The patient, aged 52, had had five children. There was nothing of note in her previous history. In 1900 profuse leucorrhœa began, but yielded to treatment. Examination showed the uterus to be enlarged. Soon severe metrorrhagia began. In 1904 shales of chalk were passed from the uterus. On examination the uterus had increased much in size, and its interior was covered with a chalky deposit, extending half-way down the cervical canal. On curetting, 3·3 gm. of chalky shales and uterine tissue were removed. The patient improved for a time, but metrorrhagia and the passage of shales again occurred from time to time. In 1906 the woman died of hepatic cirrhosis (malarial). There was no post mortem. An examination of the shales gave the following results: To the naked-eye they were yellowish in colour and varied in size, from 1 mm. to 2 cm. long, and ¼—2 mm. thick: one surface was smooth and the other rough. After decalcification, microscopical section showed no definite organic groundwork. After removal of organic matter, a quantitative analysis gave calcium phosphate 89 per cent. and calcium carbonate 10 per cent., thus there was a great resemblance to the proportions found in calcified fibroids. Examination of the curetted fragments of the uterus showed a great degree of arteriosclerosis but no areas of calcification. As to the nature of the process—it was a diffuse calcification of uterine tissue, but whether beginning in the mucous membrane or muscle is uncertain.

EARDLEY HOLLAND.

Parasitic Uterine Myomata.

A. CULLEN (*Journ. Amer. Med. Assoc.*, 1907, vol. xlix, p. 1995) describes, under this heading, several cases of uterine fibroids which have become parasitic, in that they derived their nourishment from parts other than the uterus. The omentum, the

bowel, the bladder, the mesenteric vessels, and the Fallopian tube have all been found to act as hosts to uterine fibroids. When the omentum takes on this function the changes which take place in it are very marked; the fat in its meshes disappears, and large vessels develop in it to supply the tumour, and in some cases the lymphatics have been found enlarged. Cullen describes a case in which a leash of vessels ran free in the peritoneal cavity from the outer end of the right tube to supply a large pedunculated myoma, and also an interesting one, which must have given rise to considerable difficulty in diagnosis. On the anterior surface of a uterine myoma reaching to about the level of the umbilicus, the bladder was spread out, and firmly adherent. Dense adhesions containing large blood-vessels extended from the top of the tumour to the omentum. The intestines lay behind the tumour and the omental vessels, while in front of it there were fifty-one litres of ascitic fluid; the tumour received a considerable part of its blood supply from vessels which originated from the bladder.

C. Nepean Longridge.

The Relation of Myomata to Sterility.

Hofmeier (*Münchener m. Wchnschr.*, 1907, No. 49, S. 2452), has re-examined the material of his klinik and private practice. He has had altogether 946 cases of myoma. Of the patients 205 were unmarried=21·6 per cent., and of those who were married 192=25·9 were sterile. The average number of pregnancies of those who had borne children was 3·67, that is to say about one below the average married fertility (4·5) in Germany, but this low fertility depended on an excess of one-child sterility, 106 of the 509 fecund women having been pregnant only once. Omitting these 106, the fertility of the remaining 423 was 4·45, which is not below the average. The average age of the women primarily sterile was 40·75; of those secondarily sterile 41·8 years; the average duration of sterile wedlock was 14·5 and 15·25 years respectively. The result for both classes of women was approximately the same: that from the age of 26, though married, they had been infecund, or that after bearing one child before that age they had, after it, been sterile. As the occurrence of fibroma before the age of 26 is rare, one may conclude that the fibroma could not have been the cause of the sterility, even in those who had in the early period of wedlock conceived once. Moreover, since the first pregnancy happened before the age of 26, when the uterus must be supposed to have been sound, and as, when the genital organs are healthy, the second pregnancy usually follows the first within a year or two, as moreover myomata do not develop quickly, it seems most improbable that the myomata recognized so long afterwards, and developed without symptoms, could have been the cause of the sterility.

The fact, however, that of 946 women with myoma, 398 did not conceive at all, and 106 did so only once, that 502 (that is more than 50 per cent.) had not been pregnant at all, or had been so only once, is too striking to be deemed accidental. The only possible explanation, in Hofmeier's opinion, is that functional inactivity of the uterus favours, if not the origin, at all events the development of fibroma. The remarkable frequency with which women suffering from myoma, conceive in advanced age, suggests that in such women the physiological function of the generative organs is preserved longer than in others. Hofmeier, therefore, in spite of the contrary opinions expressed by Olshausen and Wertheim, holds to his opinion that apart from one child sterility, women with myomata are not less fertile than others.

Rhabdomyoma corporis uteri.

H. Hunzicker, Zurich (*Hegars Beiträge*, Bd. xii, Ht. 2), reports one of these rare tumours (of which as yet only 6 have been recorded) in a woman 58 years of age. It was a polypoid soft growth, as large as an apple, originating near the left cornu, and there was a discharge like the washings of raw meat. Though total

extirpation was carried out early, the woman died barely five months after the first symptoms. Microscopical examination proved the growth to be a composite one consisting of various heterotopic tissues, elements resembling sarcoma, striped and unstriped muscle, fat, myxomatous tissue and cartilage, together with hyaline and fatty degeneration. The growth of the tumour had been partly by continuous extension, partly by invasion of the blood-vessels.

Endothelioma infiltrating a diffusely Myomatous Uterus.

Backhaus (*Virchows Archiv.*, Bd. x, Ht. 2) reports this very rare condition in a woman aged 43, from whom the uterus and ovaries were removed. The entire uterus, with the exception of the cervix, was thickened as if pregnant, it was diffusely myomatous, and showed numerous pea-like growths originating in the blood-vessels, especially in the veins. After referring to many recorded cases of simple diffuse myoma, Backhaus points out that the present case is peculiar inasmuch as the mixed growth had spread by way of the larger veins, the greater, non-vascular part of the wall of the uterine cavity being comparatively free from the growth. The macroscopic and microscopic appearances of the growth are fully described.

E. Scott Carmichael.

Carcinoma Corporis Uteri.

Lauwers, Kortryk (*Münchener m. Wchnschr.*, 1907, No. 49, S. 2445) has thoroughly investigated all the cases in which he operated for cancer of the body of the womb more than three years previously, and gives details of his 20 cases. The results of hysterectomy, up to 1900, by the vagina, more recently by the abdomen, have proved most satisfactory. Of the 20 patients, 7 have died from recurrence, and one other from another cause, but 12 survived in complete health more than three years, one indeed 17 years after the operation. Microscopical examination was made in every case.

The Pathology of Uterine Sarcoma.

Robert Meyer, Berlin (*Beiträge z. path. Anat.*, 1907, Bd. xlii, Ht. 1), in discussing muscle-cell sarcoma (sarcoma myomatoides and leiomyoma malignum uteri) lays much stress on the fact that normal mature musculosa is never transformed into sarcomatous tissue; in the latter the process is a malignant destructive proliferation of muscle cells, more or less definitely developed but seldom quite mature, though in the early stages no peculiar changes in the structure of the cells need be apparent. Meyer then describes two cases of the rare alveolar sarcoma of the uterus, and finally the so-called lipomyosarcoma intramuriale and the adenoliposarcoma polyposum uteri.

Tumours of the Cervix composed of Polymorphous Cells.

A. Fuchs, Breslau (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lx, Ht. 3), describes two interesting cases of cervical tumours, both sarcomata. The first was from a patient, aged 42, who had had continual hæmorrhage for 6 weeks. On examination, a polypoid mass, as large as a plum, soft, friable, and bleeding easily, was found projecting into the vagina, from the posterior lip of the cervix. Hysterectomy was performed. Microscopically, the tumour showed no definite arrangement of stroma and parenchyma. The cells differing greatly in form and size—from very small round cells with large nuclei, to the most varied forms of giant-cell—lay in a structureless stroma. The giant-cells were the most striking elements in the tumour, and mostly contained one very large oval nucleus, with about 6 nucleoli and a few vacuoles. The cells were distributed differently in different parts of the tumour. They were especially thick at the base of the tumour, at its origin from the cervix; nearer its free part, they were distributed either in small islands or as isolated cells, especially

grouped around the blood-vessels. The intercellular tissue was peculiar, fibrillated and somewhat myxomatous; a condition which might have been caused by congestion and transudation of serum through the vessel wall; indeed the condition of the walls of the veins lent support to this view—for though the intima was intact, the media and adventitia were almost completely replaced by the tumour-cells. Though the tumour for the most part was covered by organized blood, in some parts the normal cervical epithelium and glands were present. Towards the uterus, the tumour cells had penetrated far upwards, and could be seen lying amongst the muscle-fibres. The second case does not call for much comment. Microscopically it was a round-celled sarcoma. A woman of 43, who, for a few weeks had had hæmorrhage, was found on examination to have, springing from the anterior lip of the cervix, a small tumour, the size of a hazel-nut, which was spongy and friable, and bled easily. Hysterectomy was performed, but there was a rapid recurrence and death in 3 months. Post mortem, the new growth was found to fill the small pelvis and to involve both ureters. Fuchs considers sarcoma of the cervix to be more malignant than carcinoma, and that every polypus of the cervix should be examined microscopically for sarcoma.

EARDLEY HOLLAND.

The results obtained by conservative treatment in Inflammatory diseases of the Uterine Adnexa and Pelvic Connective Tissue.

A. HÖRMANN, Munich (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lxi, Ht. 1), suggests that the operative treatment of pelvic inflammatory disease might be graphically represented by a curve, which starting at zero in pre-operative times, reached its height in 1900, and since then has been gradually sinking, as conservative methods of treatment have been more and more generally adopted. The enthusiastic introduction of the abdominal extirpation of the adnexa and uterus did not give the results hoped for, nor did the various vaginal operations, introduced later, realise the expectations they aroused. The mortality from the operations was high, convalescence was often prolonged, cure was in many cases not obtained, and, not infrequently, untoward after-results—such as various herniæ and fistulæ—followed. The attention of gynæcologists had been directed to methods of operation rather than to their results, but in 1896, Sänger pleaded for more attention to results, and statistics issued later from many large German clinics having revealed the fact that results were bad, since 1900, conservative methods have been replacing operative.

A detailed discussion of the enormous literature of the subject, both European and American, and an exposition of the views of the several authorities, for some years past up to the present time, forms the first part of Hörmann's valuable and lengthy paper. He then describes the method of treatment employed since 1900 in Professor Amann's clinic in Munich, and the results obtained. The treatment has been essentially conservative, especial prominence being given to treatment by hot-air (Heissluftbehandlung) and by local pressure, by a colpeurynter filled with mercury, in the vagina (Belastungs-behandlung).

In 1899, in this clinic, 24 per cent. of the cases were treated by operation; in 1901, 4·5 per cent., including 1 case wrongly diagnosed as ovarian cyst; in 1902, 2 cases of tuberculous disease; in 1903, none; in 1904, 7 cases, including 4 cases of tubercle, and 2 cases wrongly diagnosed; in 1905, 9 cases, including 1 of tubercle, 1 of severe puerperal infection, and 6 wrongly diagnosed; but during the past 12 months, out of a total of 222 cases, only 8 or 1·35 per cent. have been operated upon. The histories of these 8 cases are given because they show the cases indicating operative treatment, to be: (1) Cases of inflammatory disease of the adnexa or connective tissue, with an acute onset and severe symptoms which endanger life, the "indicatio vitalis." (2) All cases of tuberculous disease. (3) All those cases which have resisted prolonged conservative treatment, as regards either their subjective symptoms or the objective condition of

the affected organs on examination: of this group, out of 1244 cases during the last 5 years, there have been only 7 or ·56 per cent. As to methods of treatment, especial reliance is placed in "Belastung" and "Heissluft" treatment (the technique of these treatments is described). The former is specially serviceable for chronic inflammatory changes in the adnexa, parametrium and perimetrium, and is the ideal treatment for fixed retroflexion of the uterus. It is contraindicated in all acute and sub-acute conditions attended with fever. Some patients cannot bear it because of pain. Care must be taken at the first sitting, not more than 500gm. of mercury should be used, and the colpeurynter should not be left *in situ* for more than 20 minutes.

Hörmann gives lists of the cases treated during the last 3 years, divided into two groups.

Group 1 comprises cases treated by purely conservative methods, by "Belastung" and "Heissluft," vaginal douches, tampons, etc.

(*a*) Salpingitis, pyosalpinx, salpingo-oöphoritis: 133 cases: subjectively and objectively cured or much improved, 115=91·7 per cent.; objectively unchanged, subjectively cured or improved, 18=1·4 per cent. Belastung 15 times, Heissluft 40 times (14—12 applications). These cases, from their position and small size, are not very suitable for treatment by pressure by the colpeurynter.

(*b*) Perimetritis and pelveoperitonitis (acute and chronic, with and without exudation), fixed retroflexion; 48 cases: objectively and subjectively cured or much improved, 47=97·9 per cent.; objectively unchanged, subjectively cured or improved 1=2·1 per cent. Belastung 14 times; Heissluft 13 (13—25 applications). Fixed retroflexion is especially favourable. In two instances, the uterus became movable and the pain disappeared after 3 applications.

(*c*) Parametritis, acute and chronic: subjectively and objectively cured or much improved, 24=77·4 per cent.; objectively unchanged, subjectively much improved, 5=16·1 per cent. The most obstinate cases are chronic posterior parametritis. Inflammatory diseases of the parametrium are very suitable for "Belastung" treatment; and post-partum exudates often disappear rapidly.

Group 2 comprises cases in which the position or size of the abscess permitted its evacuation by a simple incision or puncture (colpotomy or inguinal extra-peritoneal incision and drainage). After this simple procedure (which hardly merits being called operative treatment) further treatment was, in some cases, by "Belastung" or "Heissluft."

(*a*) Pyosalpinx: 24 cases: subjectively and objectively cured, 21=87 per cent.; objectively unchanged, subjectively much improved, 3=12·3 per cent. In 9 cases puncture and aspiration of the pus and after-treatment with Belastung and Heissluft sufficed. In 7 cases posterior colpotomy and drainage of the abscess was deemed necessary.

(*b*) Parametric abscess: 6 cases: subjectively cured, 4=66·6 per cent.; 2 died of thrombo-phlebitis; colpotomy was performed in 5 cases, and an extra-peritoneal opening made in another.

As to what is implied by the word "cured," Hörmann takes it to mean freedom from pain and functional ability of the organs; subsequent pregnancy alone can settle the latter point. The length of time occupied by the treatment is no disadvantage—it lasted in different cases from 37—55 days.

In view of these results, and of many similar reports from other clinics, Hörmann says that: "For these diseases we have a method of treatment which, because of its splendid results, demands our fullest attention; it has justified its adoption in such numerous cases in so remarkable a way, that it would be a crime to suffering humanity to neglect to employ it.

EARDLEY HOLLAND.

The Treatment of Pelvic Infections.

Channing W. Barrett (*Annals of Gyn. and Ped.*, October 1907), concludes a careful article with theses to the following effect: Pelvic infection is a destructive process causing sometimes only mild disturbances, sometimes death, with, or without, marked inflammatory reaction. It is, however, a protective process, which, according to that reaction, may, or may not, save the life of the patient. Pelvic inflammation has no power of self-extension, but tends rather towards repair. Puerperal infections, though usually due to the introduction of bacteria during or after delivery, may be caused by the presence of germs in the internal genitals, or in the appendix, bowel or peritoneum, during delivery or childbed. On the onset of puerperal infection all stitches should, as a rule, be removed, and the vagina and uterus should be cleared of any residual débris they may contain, with as little damage to their lining membranes as possible. During acute pelvic infection, operative treatment is not justifiable unless drainage, or removal of the uterus, tube or ovary, is indicated to remove or diminish the source of infection. Inflammation, in itself, does not indicate removal of the inflamed organ. Acute inflammation, not puerperal or due to operation, is usually gonorrhœal. Acute primary infection of the tubes and ovaries should be treated conservatively in the first instance, but if the patient is not doing well drainage may hasten convalescence or even save life. Chronic pyosalpinx indicates removal of the tube, and an acute infection supervening in chronic pyosalpinx is a direct indication for radical operation; should this have been delayed, drainage may be more desirable. Two safe operations are to be preferred to one dangerous one. Radical operation should be performed with the least possible injury to the parts left, and with the least possible distribution of infection; it is therefore better to sever the tube from the broad ligament and uterine attachments before making any forcible effort to lift it out of the pelvis.

Radical Abdominal Operation for Suppurating Adnexal disease.

Klein, Mährisch-Ostrau (*Archiv f. kl. Chirurgie*, 1907, Bd. lxxxiii, No. 33).—A report, with detailed histories of 48 cases operated upon for purulent adnexal disease, with special reference to the permanent results. On the ground of his own experience, Klein rejects not only simple extirpation of the tube, but also the incision of abscesses and all other vaginal operations for these affections. If a case has to be operated upon at all, the proceeding should be a radical one, and the uterus be removed with the adnexa; it is not even advisable to leave the cervix, on account of the frequency of exudations about the stump. Klein discusses the conditions, diagnosis, and methods of operating in his cases, and describes the difficulties that were frequently caused by adhesions, and the complications, such as intestinal fistula and injuries to the bladder, resulting therefrom. The mortality was 6·25 per cent.; the permanent results most satisfactory; symptoms of omission were generally insignificant, one ovary, however, was left in 56 per cent. of the cases.

Acute Torsion of the Pedicle of a Hæmatosalpinx.

Stratz (*Zentralb. f. Gynäkol.*, 1907, No. 46, p. 1444), at a meeting of the Netherlands Gynæcological Society, presented a specimen, with the following notes: The patient, a tertipara, aged 36, had been delivered of her last child 12 years previously; her catamenia had always been regular, profuse but painless, until February 1906, when after over-exertion in changing from one house to another, her menses were followed by profuse hæmorrhage and pains in her right side. A consultation was held on March 12, when slight hæmorrhage still persisted, with very severe pains on the right side below the ileocæcal region. Vaginal examination revealed a very tender swelling anterior but close to the uterus on the right side; the uterus was somewhat enlarged; the left adnexa were normal. Rest, ice and resorbent treatment

had no effect. On a diagnosis of tubal tumour or tubal gestation, laparotomy was performed on March 22. The omentum was found extensively adherent to the uterus and to the tumour. The latter, bluish-red in colour, proved to consist of the right ovary greatly enlarged and the right tube, and the tumour with torsion of its pedicle was upset forwards over the round ligament and adherent to the cavum Retzii. After careful detachment of the adhesions and isolation with gauze compresses, the pedicle was ligatured and divided. At the last moment the tumour burst at its upper pole and pus, thick and yellow but without stench, and some clotted blood escaped. The stump was secured in the lower angle of the wound. The operation, an extremely troublesome one, lasted 40 minutes, but healing took place by first intention, the temperature never exceeding 99·5°F.

Van Houtem, who made the microscopical examination, reported: Chronic salpingitis with small-celled infiltration of the tube wall, loss of epithelium, and adhesion of the folds of the mucosa. Minute subserous hæmorrhages and deficient staining of the substantia propria of the mucosa indicated secondary torsion of the pedicle and the formation of hæmatosalpinx. In association with the clinical course the case may therefore be accepted as one of hydrosalpinx without any symptoms whatever until acute torsion of the pedicle led to the formation of a hæmatosalpinx. The existence of a pyosalpinx without the slightest rise of temperature is remarkable.

Acute Suppurative Peritonitis and its Operative Treatment.

William H. Wathen, in concluding his address on Surgery to the 58th Annual Session of the American Medical Association, formulated the following principles for the operative treatment of all perforations into the peritoneal cavity:

1. Operate as soon as a surgical diagnosis is made and avoid purgation and opium before and after the operation. Give no food or liquid, and if there is no gastric perforation empty the stomach by lavage, and remove fæcal matter from the colon by rectal enemata.

2. Operate rapidly and, if possible, treat the foci of infection by suturing gastro-intestinal perforations or bladder wounds, by cholecystectomy or cholecystostomy, by appendectomy, or the removal of the uterus or its adnexa, always remembering to avoid peritoneal traumatism so as to protect peritoneal resistance to bacterial invasion and toxemia.

3. Expose or handle the intestines as little as possible, and do not separate adhesions or irrigate or sponge the peritoneal cavity. Establish drainage from the bottom of the pelvis through a suprapubic incision, and, if indicated, also drain the site of infection, using a large split rubber tube with or without gauze, with the patient in nearly a sitting posture.

4. Pour into the peritoneal cavity, before closing the abdominal wound, hot horse serum or saline solution to stimulate leucocytosis, and when the patient is returned to bed use saline solution by rectum, after the fashion of Murphy, and, if necessary, use the horse serum or saline solution subcutaneously.

5. Enterotomy is never indicated except in some delayed cases of intestinal obstruction or paresis, and it should then be performed quickly and with a minimum exposure of the intestine; enterostomy is contraindicated.

6. Physicians should be educated to impress on their patients the fact that acute diffuse and general peritonitis may usually be prevented by the early surgical treatment of gastric or duodenal ulcer, cholelithiasis and cholecystitis, appendicitis, tubal and ovarian infections, and acute intestinal obstruction; also in many cases of gastric and duodenal perforations.

Finally he emphasized the fact that the treatment by purgation and opium and delay of the pathologic conditions that cause acute local, diffuse and general peritonitis, and bacteriæmia and toxæmia, have caused more deaths during the last ten

years than have been sacrificed on the battlefields of the world; and that in this progressive age of civilization he who obstructs the progress of science, medicine and surgery in the prevention and cure of disease and the prolongation of life, is committing an offence against the state, humanity, morals and religion for which the ethics of his environment may cause the people to hold him to a rigid accountability.

The Prophylaxis and Treatment of Peritoneal Infection by means of Hyperleucocytosis induced by Nucleinate of Soda.

Chantemesse and Kahn (*Archives générales de Chirurgie*, October 1907), in a communication to the French Academy of Medicine reported the results obtained by the hypodermic injection of a one per cent. solution of nucleinate of soda in normal salt solution. They pointed out that nucleine had already been eulogised by Mikulics and certain American surgeons as a therapeutical means of provoking hyperleucocytosis, and suggest that an injection of 40 centigrammes of nucleinate of soda the evening before laparotomy will fortify the patient to resist a possible infection of the peritoneum. In enteric fever it is difficult to make an early differential diagnosis between peritonitis due to extension, and peritonitis due to perforation, and the injection of nucleinate of soda, which is more effective than collargol, ought to be tried. The drug seems to act by immediately, and for a considerable time, increasing the activity of the phagocytic function; its action is very powerful, and should be regulated according to the case. It is a direct preventive against infection, and when infection has occurred it is useful if employed at the beginning of that complication; its beneficial effect is proportionate to the defensive reaction it provokes, provided that the patient is capable of the necessary resistance. The hyperleucocytosis it induces is particularly useful in preventing or moderating the evolution of peritonitis due to the infection of organs covered by the serosa, peritonitis spontaneous in its origin or set up by some surgical intervention (appendicitis, etc.), and though it may not cure an acute attack it increases the chance of success of a surgical operation.

Tubal Abortion, with Eversion of the Tube.

A. Falk, Berlin (*Zentralb. f. Gynäkol.*, 1907, No. 45, S. 1404), reports: A secundipara, 23 years of age, was suddenly attacked with the symptoms of internal hæmorrhage, which was attributed to secondary rupture of the tube following tubal abortion. On abdominal section the tube was found to be everted to a considerable extent without any rupture having taken place in the ampulla. The case supports Werth's view that the expulsion of the ovum in tubal abortion is to be attributed to contractions of the tubal musculosa, and that no mechanical factors are required to explain it.

Ovarian Pregnancy with a living child, and with a living intra-uterine child also.

Menge (*Münchener m. Wchnschr.*, 1907, No. 49, S. 2452) recently exhibited to the Franconian Obstetric and Gynæcological Society, an extra-uterine gestation sac removed by laparotomy, which had contained an almost fully developed living child, the sac itself being formed entirely by the right ovary. The right tube, up to its open abdominal end, lay quite intact on the upper surface of the sac, which was connected with the uterus by the ligamentum ovarii proprium. The right ovary was indistinguishable. The left adnexa were normal. The case from which the specimen was taken was remarkable, as beside the extra-uterine fœtus, there was a living, almost fully-developed child in the uterus, which was born spontaneously head first before the laparotomy, without causing the rupture of the extra-uterine sac. The woman had been sent to the klinik by a medical man as a case of labour impeded by a tumour, and had been brought a long distance by railway. The operative extraction

of the extra-uterine child, and the removal of the ovarian gestation sac with the placenta, offered no great difficulty, although there were adhesions, and the patient lost hardly any blood. The mother was suckling both the children, and all three were doing well.

An experimental enquiry into the function of the Corpus Luteum.

KLEINHANS and SCHENK, Prague (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lxi, Ht. 2), mention Born as the first to propound the hypothesis that the corpus luteum is a gland, with an internal secretion presiding over the embedding and development of the ovum within the uterus. Fränkel, by experimental research, not only confirmed Born's views, but was convinced that the corpus luteum presided also over the function of menstruation.

The present enquiry is directed more especially into the connection between the corpus luteum and the continuation of pregnancy. The animals used were rabbits. About 9 days after fertilization, the abdomen was opened, and all corpora lutea destroyed; if within about 18 days abortion had not occurred, the abdomen was again opened to see if the ova in the uterus (the number and size of which had been noted at the first operation) were developing normally, or whether they had ceased developing, or were undergoing retrogressive changes. In all, 25 animals were used, divided into two series. In the first series, comprising 14 animals, Fränkel's technique was faithfully adhered to; under chloral-morphia narcosis the abdomen was opened by a median incision, and the corpora lutea were destroyed by the thermocautery. In the second series of 11 animals, with a view to causing less local disturbance, lateral incisions, instead of a median one, were employed, and the ovaries were thus well exposed with a minimum amount of disturbance to the uterus and its surroundings. Narcosis was dispensed with, and the corpora lutea were removed with a sharp spoon or with fine forceps, thus avoiding any of the widespread effects in the surrounding tissues probably produced by the thermo-cautery. Control experiments were made in 8 animals, in which the abdomen was opened and the uterus and ovaries slightly disturbed, but the corpora lutea not interfered with.

In 6 of the 25 animals pregnancy continued normally. In the remainder, abortion occurred, or the development of the fertilized ova was arrested. Of these 6 former cases, 2 belonged to the first series and 4 to the second; from this it must be assumed that the more extensive trauma and disturbance of the parts in the first series had an important influence. Of the 8 control animals, in 3 pregnancy continued normally, but in 2 abortion occurred, and in 3 the development of the fertilized ova ceased, proving that pregnant rabbits are very sensitive to trauma. These experiments show that, in rabbits, if after the embedding of the ovum, the corpora lutea be removed with all possible precautions, and not earlier than the ninth day, pregnancy is not necessarily interfered with. This proves that in rabbits it is not a function of the corpus luteum to preside over the development of the ovum after its fertilization. In a considerable proportion of cases, development of the fertilized ovum is arrested by merely opening the abdomen. This enquiry also disproves the results arrived at by Scrobansky, who found that after removal of both ovaries in pregnant rabbits between the tenth and fifteenth days after fertilization, the pregnancy continued, but did not do so if the corpora lutea alone were removed. EARDLEY HOLLAND.

Coitus impeded by a Hymenal Cyst and Vaginismus, Conception without Defloration.

KUNTZSCH, Potsdam (*Zentralb. f. Gynäkol.*, 1907, No. 45, S. 1403), was consulted by a woman, aged 31, on account of sterility, after she had been married for 2 years. Behind the hymen, which was intact, he found on the right posterior vaginal wall a cyst as large as a plum, of which the anterior wall was formed by the hymen itself.

He excised the cyst and the hymen, and the woman recovered. Three weeks later she had an abortion; the ovum was the size of a walnut, and although there had been no defloration, must have been impregnated before the operation.

The Etiology of Hyperemesis Gravidarum.

G. WINTER, Königsberg (*Zentralb. f. Gynäkol.*, 1907, No. 48).—Hyperemesis gravidarum used to be explained as a simple reflex neurosis until, in Williams' time, the severe and sometimes fatal cases were recognized as due to a toxæmia, leading to degeneration and necrosis of the central parts of the acini of the liver with fatty degeneration of the renal epithelium. A fatal case of the kind, with the lesions described, has come under Winter's observation, yet he considers that neurosis and toxæmia are merely different stages of the same form of disease. The hyperemesis invariably begins as a simple reflex neurosis; if it be not cured in that stage, the liver and kidneys suffer, and poisons, the products of pregnancy, may be consequently retained and lead to fatal intoxication. The treatment which Winter recommends in the neurotic stage, in addition to rest and other measures, is the administration of very large quantities of water preferentially by the rectum. The induction of abortion must be kept in view in case of symptoms of intoxication.

The Suprarenal Bodies and Osteomalacia.

M. L. BOSSI, Genoa (*Archiv f. Gynäkol.*, Bd. lxxxiii, p. 505), contradicts the current idea that osteomalacia is due to disease of the thyroid gland, and is frequently associated with goitre. In order to investigate this theory he administered thyroid extract to osteomalacic patients without any beneficial results.

The only cure known, before his experiments with adrenalin, had been castration. The first patient treated with adrenalin, a woman aged 38, was admitted into hospital on November 27th, 1906, with typical symptoms of advanced osteomalacia. She was 8 months pregnant, and had first complained of pain in the pelvic and femoral bones during the third month of pregnancy. She was suffering from absolute sleeplessness, the pain was intense, and although she lay in bed without moving, the deformity of the pelvis increased rapidly. Tonics and feeding were of no avail.

Adrenalin possesses a strong vaso-constricter action, and Bossi, in using it, was guided by the idea that it might have a beneficial effect on the blood-vessels of the bone-marrow, which are enlarged in osteomalacia.

The treatment was started on December 16th. He injected 1 cg. of adrenalin (Takamine, Parke-Davies) in a 1 :1000 solution. A few hours later the pains became less severe, and the patient had some sleep during the night. A similar dose, given on December 17th, was followed by marked lessening of pain and a good night's rest. The injection was repeated on the morning of December 18th, and the patient was able to stretch her limbs without pain. Another dose was administered on the afternoon of the same day, and the patient left her bed for a short time without feeling any pain. She slept splendidly.

On December 20th, after the seventh injection, the patient said she was cured, and an internal examination showed that the bones were returning to their normal condition, the pelvis widening again and the whole status so much improved, that the idea of Cæsarean section which had seemed unavoidable before the treatment had been begun, was abandoned. The patient had 16 more injections, and on January 7th—the normal end of pregnancy—spontaneous labour pains set in, and she was delivered of healthy twins weighing 2,700 and 3,250 gr. respectively.

The second case was that of a septipara who had suffered from osteomalacia during her last 4 pregnancies, and was in a very bad condition. The treatment was started during the seventh month, on January 1st, 1907, and lasted until the onset of labour on March 21st. Altogether 104 injections were given, in four periods of

24, 20, 28, 32 days each. Pauses had to be made owing to symptoms setting in, which pointed to the drug not being well borne. These symptoms consisted in feeling of suffocation, blushing, trembling, rigors, difficulty in breathing and general malaise. They came on about 20 minutes after the injection and lasted for about half an hour. After leaving off the drug the improvement as regarded the osteomalacia lasted for 4 days after the first period, 5 days after the second, 6 days after the third, and for 7 days after the fourth; then sleeplessness, pain, cachexia, and other troubles set in again. Three injections a day were generally given during each period, and the improvement was evident after the first two or three injections in each period; the abdominal tension became less, the bones firmer. Labour set in on March 27th, and the presentation was transverse; the child was turned, but the breech unfortunately became impacted and could not be released and, in order to obtain a living child, Bossi had to perform Cæsarean section. The child weighed 3,890 gr., the diameters of the fœtal head were above normal, and the ossification much above the usual standard.

Bossi quotes two cases in which the symptoms of osteomalacia recurred six and four years respectively after Cæsarean section and castration had been performed; both of these patients recovered entirely after administration of adrenalin. He also gives a short account of two cases in which Tamburri and Ruffi obtained equally good results. He points out that chronic cases require longer treatment than acute ones.

Since he witnessed the beneficial effect of adrenalin on the ossification of the bones of osteomalacic patients Bossi has treated two girls with severe rickets with this drug, and obtained very good results.

In his experiments on animals Bossi produced typical osteomalacia in pregnant sheep by excising one suprarenal body.

He appends a number of excellent X-ray photographs, showing the pelves of patients before and after treatment, and also those of the sheep before and after excision of the suprarenal body. H. T. Hicks.

Jovane, Naples (*Zentralb. f. Gynäkol.*, 1907, No. 50), at the Pædiatric Congress at Padua, on the basis of 18 cases, confirmed Bossi's report of the good effect of suprarenal extract in rickets.

[Cf. *ante* vol. xii, p. 459.]

The treatment of Osteomalacia with suprarenal preparations.

E. Puppel, Mainz (*Zentralb. f. Gynäkol.*, 1907, No. 49), reports two cases of most severe osteomalacia quite similar in their symptoms, but quite different in their reaction to suprarenal preparations. The first was that of a secundipara, aged 19, in the seventh or eight month of pregnancy; she was given 1 ccm. of paranephrin Merck, a solution of 1 : 5000. This was followed by vomiting, palpitation of the heart, shivering and precordial anxiety, but 24 hours later the patient was able to get up out of bed alone. She had three injections altogether, and was then completely cured. The patient in the other case was an octipara, 34 years of age, in a very miserable condition. The incidental effects of the injections were exactly the same as in the other case, but they had no beneficial effect whatever upon the osteomalacia. He concludes that though adrenalin or its substitutes may be tried in suitable cases, the treatment of osteomalacia, in general, remains the same as hitherto, phosphorus, cod-liver oil, salt baths, and castration.

Osteomalacia in Westphalia.

Everke, Bochum (*Monats. f. Geburts. u. Gynäkol.*, Bd. xxvi, Hto 2), has treated 41 cases of osteomalacia. He operated on 17; in 10 cases of pregnancy and contrac-

tion of the pelvis he performed Porro's operation, total extirpation or castration, with two deaths; in seven women, who were not pregnant, he performed total extirpation or castration, with five cures and two fatalities. Of the remaining 24 less serious cases, some are still under treatment. The means employed up to the present have been the induction of abortion, the administration of phosphorus and cod liver oil, and brine baths. After castration, the pains in the bones soon disappeared; the sacral pains, though relieved, generally persist to some extent owing to fatigue of the muscular and ligamentary system from the vicious distribution of the body weight caused by the deformed attitude, but the bones do not undergo further softening, they regain their solidity and capability of supporting the body and the progress of the deformity is arrested. The omission of ovulation and consequent impossibility of further conception prevents the rekindling of the disease.

Eclampsia treated by Renal Decapsulation.

O. Franck, Flensburg (*Münchener m. Wchnschr.*, 1907, No. 50, S. 2471), gives short notes of the nine cases of decapsulation of the kidneys for eclampsia, previously published, and adds another, a severe case of deep, comatose eclampsia, in which, in spite of operative delivery; the patient in 15 hours had 26 fits at regular intervals; her urine was suppressed, and had contained 0·4 per cent. of albumen. The prognosis was the more unfavourable as fits had occurred in the early months of pregnancy. The fits ceased three hours after the operation for twelve hours, when there was one recurrence; after another attack they stopped altogether, 24 hours after the operation.

The amount of urine, previously 127 c.cm. in 16 hours, increased to 741 c.cm. in the first 24 hours after the operation (beside what could not be collected), and to 1,313 c.cm. in the next 26 hours. The amount of albumen decreased from 0·4 per cent. to 0·075 per cent., and 0·05 per cent. on the first day, and on the second day after the operation to nil. In the first 24 hours the temperature fell from 39·9° to normal, and the pulse rate from 140 to 112. The coma began to diminish on the day after the operation, and complete consciousness was regained after two days. Unfortunately, pneumonia with high fever set in on the second day, and led to the fatal result.

The performance of decapsulation seemed justified by the absolutely moribund condition of the patient, and Franck, attributing to it the immediate objective improvement in her condition, and the fatal result to the pneumonia, considers the case a proof of the value of decapsulation, and a warning not to delay its performance too long. The mode in which the decapsulation acts is still quite obscure; it cannot, at all events in eclampsia, be by relaxation of tension in the kidney; in none of the cases has there been any mention of protrusion of the organ upon the division of the capsule, indeed Polano, Gauss, and Edebohls himself, mention that there was no intrarenal tension. All the cases in which the time of the improvement is mentioned, show a certain regularity in the improvement beginning 24 hours at least after the operation, and at the obduction in Franck's case, 72 hours after the decapsulation, both kidneys were found firmly adherent to their surroundings; he therefore suggests that the relief to the kidneys may depend on the establishment of new channels of circulation analogous to the results of Talma's operation.

Reviewing the whole of the ten cases: in two the operation failed entirely, in one of these, in which the decapsulation was performed by Edebohls before the uterus had been emptied, it may be questioned whether this course was justifiable; in two other cases, it is at least probable that the effect of the decapsulation on the course of the eclampsia was beneficial, while in the remaining six, it was followed by a remarkably rapid recovery. In eight cases the uterus had been emptied before the decapsulation, and one of these was not influenced by it; in two, decapsulation preceded delivery, but was only successful in one of them.

As to the mortality of the operation which hitherto as a rule has only been undertaken in very critical cases, it is difficult to say anything definite, yet even if so high (30 per cent.) as in these ten cases one may assert that according to the results up to date, immediate decapsulation of the kidneys is indicated when eclampsia persists after the uterus has been emptied. On the value of the proceeding before the uterus has been emptied, it is for the future to decide.

The operative era of Midwifery.

A. HEGAR, Freiburg (*Hegars Beiträge*, Bd. xii, Ht. 2), gives a most interesting critical review of the various complications of childbirth, and of the ways of treating them practised formerly, and at the present time. In regard to contracted pelves, he very justly points out that the only methods of treatment even now available, are such rough and inhuman proceedings as Cæsarean section, pubosteotomy and perforation, nor does there seem to be any prospect of improvement in the existing methods of delivering a woman. There is, however, another way open to us, in the investigation of the causes of contracted pelvis, and preventing its occurrence. Hegar lays particular stress upon mothers suckling their children, and on the importance of proper nourishment, light and healthy homes, suitable exercise and employment.

The Application of the High Forceps in Face Presentation.

O. v. HERFF, Basle (*Hegar's Beiträge*, 1907, Bd. xii, Ht. 1), reports an interesting case which proves that the forceps may be useful even in high transverse presentations of the face, and that it should therefore be tried, before the perforation of the child is attempted, if version is no longer possible or the opportunity for it has been missed. The operation, however, is not one for a beginner, and must be done without any haste; axis traction forceps must be employed.

R. JOLLY, Berlin (*Zentralb. f. Gynäkol.*, 1907, No. 50), reports two cases which are certainly not encouraging. In the first the asphyctic child was revived, but died a few days afterwards, apparently owing to injuries to the skull by the forceps; the mother's convalescence was delayed by a feverish childbed owing to pelvic exudation. In the second case the child died during labour, and the mother's childbed was fever free. Jolly admits that these cases have left him no desire to try the high forceps in face presentations, and that forceps should not be applied until the head is in the pelvis. Otherwise there is nothing to be done but to perforate—or under the most favourable circumstances, to perform pubiotomy.

Vagitus Uterinus.

H. E. A. WASHBOURN (*Brit. Med. Journ.*, 1907, vol. ii, p. 1776) reports: In a primipara, who had been for some hours in labour, the membranes having ruptured and the liquor amnii escaped, forceps was applied, as the head would not engage on account of flattening of the pelvis. During the manipulation of the lower blade the fœtus gave a distinct whining cry, and while the upper blade was being adjusted the same cry was repeated twice, and was distinctly heard also by two women in attendance. An hour later the child was delivered alive, though considerably damaged, having a fractured parietal bone, a fractured base, a hæmatoma of the scalp and facial paralysis of one side. In spite of these injuries it survived and did well.

FRANK E. TAYLOR.

Giant Cell formation in the Decidua.

OBERNDORFER (*Virchows Archiv*, Bd. x, Ht. 2) reports: A woman, aged 33, was curetted for an incomplete abortion and hæmorrhage, and again curetted 14 days later. Microscopic examination of the material abraded on the second occasion re-

vealed placental remains, with enormous enlargement of the cells and increase in the number of their nuclei in certain parts of the section. The cells resembled decidual cells in their staining properties, but were from 5 to 10 times the usual size of such, many of them contained 40 nuclei and most of them from 10 to 20. They were not to be confused with masses of syncytium, the arrangement of the protoplasm and nuclear structure being quite different. The origin of these cells is difficult to determine. The first curettement may have had some causal relation with their development; they may represent steps in a regenerative process of the decidual tissue brought about by the injury then caused. E. Scott Carmichael.

On the Origin of Subchorionic Cysts of the Placenta.

A. Blau, Vienna (*Zeits. f. Geburts. u. Gynäkol.*, Bd. lx, Ht. 3), has examined many of these cysts, and, to illustrate his views of their origin, gives details of three, and discusses the literature about them.

Case 1. The cyst, 3·5 cm. in diameter, lay near the insertion of the cord, between two branches of the umbilical vessels. It contained a turbid, yellow, serous fluid. The roof was formed by the chorion; the base of the interior of the cyst was covered with fine granular excrescences consisting of fibrin. Microscopical examination showed that the floor of the cyst was formed by a placental infarct. Beyond the cyst, the chorion was, as usual, separated from the intervillous spaces by a layer of fibrin, continuous with the fibrin of the infarct. Between the fibrin-layer and the chorion were nests of trophoblast cells, but there were no such cells in the fibrin forming the floor of the cyst. Where the fibrin-layer and the infarct met, the chorion was lifted up, forming the cyst. The angle where this lifting up of the chorion commenced was filled in with a granular homogeneous mass, obviously originating from a blood-extravasation. This cyst therefore was formed by subchorionic hæmorrhage occurring over an infarct.

Case 2. The external appearances were similar to Case 1. The cyst-floor was formed by an infarct. Microscopical examination showed that the structure of the infarct became looser and looser as the cyst was approached, until near the cyst it consisted of an open network, containing large spaces. This cyst, then, seems to have originated in a large space formed by the breaking down of an infarct, the fluid formed in this process raising the chorion off the infarct. There was also evidence that some blood-extravasation had occurred.

Case 3. In external appearance the cyst was similar to 1 and 2, but microscopically there were marked differences. The floor was formed by a small infarct. Beyond the cyst, between the fibrin-layer and the chorion, were many trophoblast cells in various stages of degeneration. The floor of the cyst, above the infarct, was formed by many layers of these cells. The chorion was raised up above these forming the cyst-cavity. At the corners, where the raising up of the chorion commenced, were large masses of cells in advanced degeneration, enlarged, swollen and becoming fluid. This cyst, then, arose from a degeneration of subchorionic trophoblast cells.

The majority of subchorionic placental cysts arise in the latter way. Cysts arising in the ways of Cases 1 and 2 are less common. Some authorities hold that the cells, lying between the chorion and the fibrin-layer, which give rise to cysts, are decidual cells. Blau considers this view incorrect: in his cases they were clearly trophoblast cells, and the latest investigators agree with this view.

Eardley Holland.

Lithokelyphopedion.

H. E. Hayd (*Amer. Journ. Obstet.*, 1907, vol. lvi, p. 657).—The patient was over 67 years old. She was married when 22, and became pregnant at the age of 35. The pregnancy was accompanied by great pain on the left side of the abdomen. At full time tumultuous pains came on, accompanied by loss of blood; a doctor saw her

and told her that she was in labour and that the baby was alive. The pain lasted for some days, but finally disappeared ,and the abdominal tumour gradually diminished in size, and for many years she suffered no inconvenience from it. Later on it began to hurt her, and on operation a stony mass, weighing over two pounds, was shelled out of the left broad ligament, without any bleeding, and she made a good recovery from the operation. The mass contained a calcified fœtus.

C. NEPEAN LONGRIDGE.

Ovarian lithopedion.

LICHTENSTEIN, Dresden (*Zentralb. f. Gynäkol.*, 1907, No. 43, p. 1308), exhibited at the 79th Congress of German Naturalists and Physicians, a specimen obtained at the obduction of a woman 75 years of age. She had endured the tumour for some 30 years in the course of which she had given birth to a fully-developed child. Her medical attendant had diagnosed her condition long before her death, but had not been able to persuade her to consent to an operation.

The specimen was a senile uterus, with senile adnexa on the left side. The right ovary was transformed into a tumour the size of a man's head, the walls of which contained calcareous insets. The right tube could be seen in front of the tumour, perfectly free to its fimbriated end and, behind it, the ligamentum proprium ovarii passed onto the tumour. In the section of the tumour an almost fully developed fœtus was found in a crumpled up position a little to the left of the middle line. The head, spinal column, extremities, viscera, and female genitalia, were plainly visible, as well as the placenta and umbilical cord.

The Operative Treatment of Intracranial Hæmorrhage in the Newborn.

L. SEITZ, Munich (*Zentralb. f. Gynäkol.*, 1907, No. 30).—A male child, 51 cm. long and 2,950 grammes in weight, with a head 31·5 and 36 cm. in circumference, the second of twins born spontaneously and not asphyctic, showed from early on the third day increasing symptoms of cerebral compression, which led to a diagnosis of effusion over the right cerebral hemisphere, probably with infratentorial hæmatoma also. Seitz opened the skull, turned the whole right parietal bone outwards, removed the clotted blood, and washed the entire hemisphere with physiological salt solution. The operation lasted 25 minutes, and was performed without anæsthesia, but the comatose child showed hardly any reaction until the dura was incised, when its breathing became freeer, it cried a little, and shut its left eye which had been open. But the lagopthalmos returned, the coma became more profound, and death occurred 10 hours after the operation. The autopsy revealed infratentorial hæmorrhage over the cerebellum and medulla. Cushing has performed similar operations in four cases, twice with success. Seitz appends the history of another case: a very slightly asphyctic child, born easily and spontaneously by a primipara, on the first day breathed regularly, drank and slept, but was then attacked by cyanosis, convulsive breathing, clonic spasms of the right arm and leg, and various other convulsions. It died 48 hours after birth under signs of increasing cyanosis with marked greyish-blue discoloration of the skin. There was infratentorial hæmorrhage over the cerebellum and medulla, with secondary escape of a small amount of blood into the left cerebral hemisphere.

REPORTS OF SOCIETIES.

ROYAL SOCIETY OF MEDICINE.

Obstetrical and Gynæcological Section.

Meeting held Thursday, January 9th 1908, the President, Dr. Herbert Spencer, *in the chair.*

Dr. Herbert Williamson read a short communication on a

Case of Enucleation,

during the seventh month of pregnancy, of a uterine fibro-myoma weighing 17½ lbs., which was followed by premature labour two days later. The patient was a primigravida, æt. 32. When four months pregnant she suffered from repeated attacks of acute abdominal pain, and became emaciated with some fever, and the distension of the abdomen was so great that she was unable to lie down in bed. At the time of the operation the tumour, which could be felt distinct from the gravid uterus, was thought to be a malignant growth of the ovary, but it was found to be a uterine fibro-myoma undergoing necrotic degeneration. The area of attachment of the tumour to the uterus was rather narrow, but required enucleation. A premature child was expelled three days later, but the patient made an uninterrupted recovery.

Norman C. Carver, M.B., and John S. Fairbairn, M.B., read a case of

Hæmorrhage into the Pons Varolii as the Immediate Cause of Death in the Eclampsia of Pregnancy, with Illustrative Cases.

The authors recorded the case of a primigravida, æt. 24, who, after exhibiting signs of impending eclampsia, was found unconscious and straightway admitted to hospital. In view of the history of the illness and the presence of œdema and a high degree of albuminuria, the case was thought to be one of eclampsia, and, as the patient was in a state of deep coma, with Cheyne-Stokes respiration, rapid dilatation of the cervix was done, followed by the extraction of a fœtus of between five and six months development. The patient died a few hours later, and at the autopsy death was found to be due to an extensive hæmorrhage into the pons varolii. The authors argued that although the immediate cause of death was a pontine hæmorrhage, the case was primarily one of eclampsia, and in support of this quoted four recorded cases of a similar nature, in which an unsuspected cerebral hæmorrhage was found post mortem. Details of these cases were given, and, from an analysis of the symptoms presented by them and the authors' case, attention was drawn to such features in them as might serve to arouse a suspicion of the occurrence of apoplexy in the course of an eclamptic attack. These are, briefly, deep coma, and cyanosis, with marked respiratory disturbance, occurring in a young patient presenting the urinary and other signs of eclampsia, and they are especially suggestive when the attack is unaccompanied by the usual eclamptic convulsions.

The President (Dr. Herbert Spencer) thanked the authors for the interesting paper. He had not met with a case of hæmorrhage into the pons varolii in eclampsia, but he could recall two cases of hæmorrhage into the substance of the brain, one observed at a post mortem examination and the other in which hemiplegia occurred, from which the patient slowly recovered. He thought that apoplexy was a well-

known cause of death in eclampsia, and was surprised that the authors had not found more cases recorded, although they did not claim that their paper was exhaustive. In view of the possibility of the occurrence of cerebral hæmorrhage in eclampsia, the intravenous injection of a large quantity of saline fluid would appear to be not unattended with risk.

Dr. MACNAUGHTON-JONES recalled the fact that the "apoplectiform" was one of the old writers' division of eclampsia, and in which sanguineous and serous effusion occurred into the ventricles. The symptoms were such as described in this case. He dwelt on the importance of early anticipation of the eclampsia, especially through the ocular symptoms and signs which were often present, and in which an ophthalmoscopic examination afforded most valuable evidence of the approaching danger. One of the most valuable therapeutical means they possessed to control the increased blood pressure in these cases of threatening cerebral hæmorrhage he believed to be the employment of weak doses of pilocarpin, which was also useful in checking the convulsions. If necessary, its full physiological action might be neutralized by $^1/_{100}$th of a grain of atropin. He had known eclampsia ending fatally occur as early as the fourth month of pregnancy.

Mr. A. LIONEL SMITH said he had seen three cases of cerebral hæmorrhage complicating eclampsia or toxæmia of pregnancy, in all of which the diagnosis was confirmed at the necropsy. In one of them the hæmorrhage occurred in association with eclamptic convulsions after delivery, but in the other two the patients were not in labour, and had only reached about the 30th week of pregnancy.

Dr. AMAND ROUTH had not had an opportunity of seeing a post mortem examination of any case dying of puerperal eclampsia where cerebral hæmorrhage had been found, but thought the authors had shown how often such hæmorrhage might supervene and be the immediate cause of death. He thought it unwise to increase arterial tension, as must have been done in the first case reported, when 10 oz. of blood were removed, and 40 oz. of saline infusion injected. This may well have increased the tendency to hæmorrhage. He presumed that saline infusion in these cases is given to dilute the toxines at each given point, and to increase the leucocytosis to combat the toxines; but it was doubtful if it should be given when it increased arterial pressure. On the other hand, he considered that the suggestion to give pilocarpin (at all events in the doses usually prescribed—viz., $^1/_3$th gr.) was fraught with grave danger. He considered it should never be given in cases where apoplectic symptoms, or coma, were present, for he had seen patients under its influence suffocated by the enormous quantity of ropy mucus secreted by their salivary and broncho-pharyngeal glands. He was interested in the fact that epigastric pain had been mentioned as a precursor of eclampsia in some of these cases of albuminuria of pregnancy. He considered this sign, following ocular evidences of high arterial tension, increasing albuminuria, and diminishing excretion of urea, a valuable indication that eclampsia was impending, and that steps should be taken to induce labour without needless delay.

Dr. D. C. RAYNER referred to a case of eclampsia under his care, in which a fatal termination was due to cerebral hæmorrhage. The patient was in the eighth month of her third pregnancy when convulsions set in. They were frequent, and seemed more marked on the right side. The pupils were also noticed to be unequal. The urine contained albumen, and the patient was not in labour. Coma deepened, and the patient died in a few hours. There was extensive hæmorrhage into the right corpus striatum and optic thalamus.

Dr. R. H. HODGSON said that he thought the lesson to be learnt from this instructive paper was, in all cases of eclampsia in pregnant women, empty the uterus. He had done so in six cases he had had, and in all the women recovered, five very rapidly, and one in whom some slight convulsions continued for five days, was quite well after one injection of pilocarpin. Emptying the uterus causes the blood to flow to

the portal system, and thus lessens the danger of cerebral hæmorrhage. He did not understand the object of the saline injection.

Dr. FAIRBAIRN, in reply, said no attempt had been made to make an exhaustive collection of cases of apoplexy as the cause of death in eclampsia, and the cases collected were those of hæmorrhage into the pons or base of the brain without unilateral symptoms to suggest apoplexy. Large cerebral hæmorrhages were not frequent in eclampsia, as was shown by the statistics quoted in the paper. The cases recorded were undoubtedly rare, but the possibility of a deeply comatose and cyanosed eclamptic patient having also a cerebral hæmorrhage ought not to be lost sight of, especially in giving a prognosis.

The following specimens were shown :—

Dr. J. P. HEDLEY : (1) *Hydrosalpinx, with Torsion of the Pedicle;* (2) *Double Hæmorrhagic Cysts of Ovaries.*

Dr. HAROLD SINGTON : *Tumour of the Fœtal Head.*

Dr. LEWERS : *Cancer of the Cervix (advanced); Hysterectomy by Wertheim's Method.*

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting held at Manchester, December 20th, 1907, the President, Dr. E. O. CROFT *(Leeds) in the chair.*

Dr. WILLIAM WALTER (Manchester) mentioned a case of

HÆMATOMA OF BOTH BROAD LIGAMENTS

occurring a few hours after a supra-vaginal hysterectomy on a patient aged 37, who was exhausted by prolonged metrorrhagia. The tumour grew from the posterior wall of the uterus and extended laterally to the sides of the pelvis. The myoma was enucleated from its attachments by deep incision of the uterus, but general oozing from the broad ligaments gave trouble. The pulse was soft at the end of the operation, four hours later it had risen to 96, and at 6 p.m. it was 116 per minute, and a small amount of blood was escaping per vaginam. At 8 p.m. the patient became collapsed, and complained of abdominal pain. Saline injections were given, ether administered, and the abdomen opened. Not more than 8 ozs. of free blood was found in the abdomen, but both broad ligaments were distended with blood and clots. There was no bleeding apparent from the main vessels, nor had their ligatures slipped, but there was a general oozing from the broad ligaments. A few sutures were inserted, the peritoneum was drawn over the cervical stump and the abdomen closed again. Recovery was afterwards uneventful. The collapse simulating extensive hæmorrhage was the chief feature of interest in the case, and may have been due to intense pain from over-distension of the broad ligaments in a patient already debilitated by previous hæmorrhage.

Dr. JOHN CAMERON drew attention to the nerve supply of the broad ligaments and pelvic fascia, and thought the symptoms were readily explained by the pressure of the hæmatoma on nerves directly connected with the lumbar sympathetic.

Dr. WALTER also gave particulars of a case of

ABDOMINAL DISTENSION

arising the day after supra-vaginal hysterectomy had been performed on a single woman aged 40, who sought relief on account of menorrhagia and retention of urine produced by a myoma. The operation was performed in the Trendelenberg position, and three hours afterwards the pulse was 88, and the patient fairly comfortable. The day following the abdomen was slightly distended and flatus could not be passed

voluntarily. The pulse gradually rose, and on the evening was 130, vomiting and pain were marked, and nutritive enemata were no longer retained. On the third day symptoms were more pronounced, and the pulse became 152 per minute. It was decided to re-open the abdomen unless some improvement took place. At 8 p.m., one of the enemata took slight effect, and the pulse fell to 140, and the next day to 128. Hot fomentations and feeble massage aided the ordinary treatment by enemata and calomel. The obstruction was possibly due to kinking of the intestine when the patient was being changed from the Trendelenburg to the horizontal position. Recovery afterwards was uninterrupted.

Sir William Sinclair (Manchester) related a case of

Gonorrhœa and Sepsis of the Uterus

in a patient aged 28, who had been 7 years married. Repeated operations of curettage and the removal of the uterine appendages had been carried out with little benefit before he saw her on account of constant abdominal pain. On November 15th he extirpated the uterus per vaginam, and steady improvement followed. He advocated conservative treatment from the outset in these cases.

Dr. Lloyd-Roberts (Manchester) mentioned two cases of

Cæsarean Section.

1. A.H., age 34, married 14 years, pregnant for the 9th time. Craniotomy had been performed on five occasions, and premature labour induced twice, in both instances a still-born child was delivered. Four years ago Cæsarean section was successfully performed. The estimated true conjugate was 3 in. There were no adhesions between the uterus and parietes resulting from the previous operation. Both mother and child did well.

2. R.S., aged 27, was delivered of a full-time child 15 months ago by craniotomy. The true conjugate was estimated at rather under 3 in., and there was also transverse contraction due to deformity of the left ileum. The operation was performed without difficulty.

Dr. Roberts also related a case of

Ectopic Pregnancy at Full Term,

and showed the fœtus, placenta, and gestation sac successfully removed by abdominal section.

Dr. Arnold W. W. Lea (Manchester) communicated two cases of

Diffuse Adenoma occurring in Fibroid Uteri,

and showed the specimens and microscopic sections. The patients, aged 37 and 40, were nulliparous, and sought advice on account of excessive menstrual loss, lasting 8 to 10 days, and producing marked anæmia. The uterus was uniformly enlarged, the appendages were normal, and there was no pelvic peritonitis. The diagnosis lay between malignant disease of the body of the uterus and myomata. Vaginal hysterectomy was performed, in both instances the patients made uneventful recoveries.

Pathologically the specimens closely resembled each other. The muscular wall showed diffuse hypertrophy, the thickness varying from 1½ to 2 inches, and the endometrium was the seat of multiple polypoid projections, which microscopically were seen to consist of gland alveoli lined by a single layer of columnar epithelium, showing little tendency to invade the muscular wall. Sections of the uterine muscle showed hypertrophy of its elements but no evidence of encapsuled myoma.

Dr. Lea did not think the condition was adequately described under the term "adenoma," as the increase in thickness of the uterine wall was such a striking feature. Nor, on the other hand, could it be regarded as a diffuse adeno-myoma where the uterine glands invade a definite myoma of the uterus. He suggested that possibly the muscular hypertrophy was a secondary effect to the presence of the

adenomatous polypi, the latter acting as a foreign body and stimulating the growth of the muscular wall. In most cases the removal of the polypi by curettage only afforded temporary relief, and hysterectomy had to be resorted to.

Dr. E. Embrys-Roberts (Liverpool) gave the pathological report on a case of

Primary Unilateral Superficial Papilloma of the Ovary

(Illustrated by lantern slides),

a detailed account of which appears in this issue of the Journal, p. 96.

Dr. John Cameron (Manchester) exhibited a number of dissections demonstrating *The Supports of the Pelvic Viscera.* After pointing out that the muscles forming the pelvic floor in man were now recognized as vestigal structures, he directed attention to the fact that we must regard the fascia surrounding the visceral branches of the internal iliac vessels (the perivascular fasciæ), as forming the most important support of the pelvic viscera both in the male and in the female. He then went on to suggest that operative treatment for prolapsus uteri, must be directed not to the pelvic outlet alone but also to this perivascular fascia.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Wednesday, 27th November, 1907, Dr. E. H. L. Oliphant *presiding.*

Specimens.

Dr. Balfour Marshall: (a) *Chorionepithelioma of Uterus,* with microscopic sections of uterine wall, ovaries, and iliac glands. (b) *Lutein Ovarian Cyst,* (a) *Microscopic section of Cyst Wall.*

Communications.

I.

Dr. S. Cameron:

Vascular Changes in Uterine Fibroids.

This paper was illustrated by a series of microphotographs representing the various vascular changes which had been observed in cases under Dr. Cameron's care. Observations were made on cases showing necrobiotic changes, on the condition of the capsule of these tumours, and on the altered and pathological state of the blood-vessels.

Dr. Louise McIlroy referred to the difficulties in staining sections of fibroid tumours and of distinguishing innocent from malignant conditions.

Dr. Balfour Marshall agreed with Dr. Cameron's remark as to the care required in ligaturing the round ligament during the removal of uterine fibroids. Personally he had not seen a case of hæmatoma forming from hæmorrhage from the round ligaments. He narrated a case where a large vessel sprang from the omentum and entered a uterine fibroid, it had the appearance and situation of a ureter. Reference was made to the souffle heard in fibroids.

Dr. E. L. Oliphant thanked Dr. Cameron for his interesting communication, and said in his experience elevation of temperature did not frequently accompany necrobiotic changes. Hæmatoma from round ligament bleeding he had never seen. With regard to the capsule of fibroids his observations were that in the rapidly-growing red tumours there was no separable capsule; in the ordinary, slowly-growing fibroid the capsule was well marked. He referred to a case where he had divided a vessel passing from a uterine fibroid up towards the kidney, at first it was supposed to be the ureter but it proved to be a greatly enlarged blood-vessel.

Dr. Cameron replied briefly.

II.

Dr. BALFOUR MARSHALL communicated:

1. NOTES ON A CASE OF REPEATED TWIN PREGNANCY.

2. A CASE OF CHORIONEPITHELIOMA OF UTERUS.

There was a history of a hydatidiform mole having been passed on September 12th 1906; from that time the patient had repeated uterine hæmorrhages until her admission into hospital on 27th July 1907. There was found, on examination a uterine tumour the size of 3½ months pregnancy; on exploring the uterine cavity the nature of the tumour was determined. Vaginal hysterectomy was performed by the clamp method. The patient remained perfectly well until the clamps were removed 48 hours after operation, when she suddenly developed signs of acute peritonitis and died in 24 hours.

Dr. W. D. MACFARLANE stated the condition of the organs on post mortem examination. There was great retraction of the tissues where the clamps had been, and no attempts at healing; there was a marked peritonitis. The heart, liver and kidneys were in an advanced state of fatty degeneration; the lungs were free from secondary involvement—the only parts involved were two iliac glands on the right side. The sections of the ovaries showed no excess of lutein cells.

Dr. A. N. MCLELLAN asked if vaginal hysterectomy had been performed on account of the patient's condition, and if it were to be preferred to the abdominal method.

Dr. S. CAMERON referred to a case of chorionepithelioma under his care where the fundus had been eroded by the new growth, and the omentum had become adherent and so prevented further advance.

Dr. MARSHALL replied that he performed vaginal hysterectomy because of its rapidity, there being less shock, and the results compared favourably with the abdominal method.

Dr. BALFOUR MARSHALL communicated:

3. NOTES ON A CASE OF CORPUS LUTEUM CYST.

The cyst was ruptured during bimanual examination, and on abdominal section free hæmorrhage was found to have taken place; the cavity of pelvis contained a considerable amount of blood. The cyst was removed, and the patient made a good recovery.

Dr. A. L. MCILROY had a similar experience of rupture of a small ovarian cyst during examination; there was, however, no bleeding.

Dr. S. CAMERON referred to two cases in which hæmorrhage had occurred from ruptured ovarian cyst. One case did well after operation, the second was discovered on post mortem examination.

Dr. W. D. MACFARLANE said the rupture of this corpus luteum cyst was his second experience of rupture of an ovarian cyst with hæmorrhage—in both cases the bleeding had been considerable. The differences of arrangement of the tissues, in luteum cysts, as seen on microscopic examination, were briefly enumerated.

EDINBURGH OBSTETRICAL SOCIETY.

Meeting on December 11th, 1907, the President, Professor STEPHENSON, *in the chair.*

The following specimens were exhibited:—

Dr. J. W. BALLANTYNE: (1) *A Hydatid Mole*—the specimen showed an unusually large amount of dense blood-clot. (2) *An Abortion Sac*, probably about the sixth or seventh week, in which no embryo could be found. (3) *A Portrait of Paul Chamberlin.* From the date of the portrait and the age of the subject it is more

probably "Peter Chamberlin," as suggested in Aveling's account of the Chamberlin family. (A full report of this will appear in a future number, with a reproduction of the portrait.)

Dr. HAULTAIN showed: (1) *Multiple large subperitoneal Fibroids*, growing from a uterus only slightly enlarged. The fibroids had produced almost complete torsion of the uterus. (2) *A Uterus with a soft Fibroid*, growing from the supravaginal portion of the cervix—in this case the uterine cavity was greatly enlarged.

Dr. FORDYCE showed a *Uterus with large subperitoneal Fibroids*, the uterus had undergone complete torsion, intestinal obstruction supervened, necessitating an emergency operation.

Dr. HAIG FERGUSON showed (1) *Two specimens of Fundal Carcinoma*, removed by abdominal panhysterectomy—in one case the patient was 60 years of age. (2) *A Dermoid Tumour*, which had, by torsion, become detached from its pedicle. (3) *Large double Pyosalpinx*—one tube was so large that it formed an abdominal tumour. On examination the pus was found to be sterile. From the history of the case the condition was evidently of tubercular origin. (4) *Uterus removed by Vaginal Hysterectomy for Carcinoma of the Cervix in an early stage*. (5) *A Uterus removed by Vaginal Hysterectomy*, showing sarcomatous infiltration of a submucous fibroid. The patient, 26 years of age, had previously had three fibroid polypi removed. (6) *Two Tubal Gestations*. (7) *Parovarian Cyst*, showing torsion of the pedicle. (8) *Uterine Fibroid*, removed by abdominal hysterectomy, which had been associated with pyosalpinx on one side and hydrosalpinx on the other.

Dr. A. DINGWALL FORDYCE read a paper on the

PRACTICE OF ARTIFICIAL INFANT FEEDING,

in the course of which he laid down the following general principles to serve as the basis for treatment: (*a*) Definite, distinct, and minute instructions as to diet; (*b*) *gradual* increase of food constituents in healthy babies; (*c*) *sudden* and thorough diminution of food constituents in the cases of infants suffering from digestive disturbances, more particularly where this condition is an acute one; (*d*) in the cases of infants who have previously suffered from digestive disturbance increase of food constituents both in amount and nature must be extremely gradual; increase in the amount and quality of a food must *never* take place simultaneously; and (*e*) alteration of the diet is, as a rule, to be brought about by immediate stoppage of the diet in use and the commencement at the lower rungs of the nutritional ladder, or by the gradual replacement in each feed of the diet in use by the diet recommended. He then proceeded to discuss the practical consideration of the diet in connexion with the following common types of infants: 1. Healthy baby, hand-fed from birth. 2. Healthy baby, weaned at different ages. 3. Organically healthy baby at varying ages, previously improperly fed: (*a*) displaying no markedly abnormal symptoms; (*b*) ill-nourished, etc., no marked diarrhœa or vomiting; and (*c*) diarrhœa and vomiting, (1) acute and (2) chronic. 4. Baby, previously properly fed, suffering from acute digestive disorder. 5. Organic disease or acute infective condition.

The PRESIDENT, Dr. JAMES CARMICHAEL, Dr. J. W. BALLANTYNE, Dr. ELSIE M. INGLIS, Dr. J. S. FOWLER, Dr. J. RITCHIE, and Dr. C. M. PEARSON made remarks on the paper, and Dr. DINGWALL FORDYCE replied.

ROYAL SOCIETY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

President: E. H. TWEEDY, M.D.

Sectional Secretary: HENRY JELLETT, M.D.

Meeting: Friday, December 13th, 1907, the President, E. H. TWEEDY, *in the chair.*

The PRESIDENT showed, for Dr. DUKE, a *Self-retaining Tenaculum for Cervix*, and an *Apparatus for the Rapid Removal of Swabs from a Playfair's Probe.*

Dr. Henry Jellett exhibited (a) *Uterus showing Unusual Thinning of the Muscle of the Fundus after Pregnancy;* (b) *Double Carcinoma of the Ovaries Secondary to Double Mammary Cancer.* The first specimen, he said, was of interest, not on account of the condition for which it was removed, but for the condition found present after removal. The patient, who was thirty years old, was sent to him suffering from carcinoma of the vagina. There was a large patch on the posterior vaginal wall involving about the upper third of the vagina, and though it was separate from the cervix, it had a tendency to extend into the right fornix. The rectum was free. He considered the case was operable, provided he could operate by the abdominal route, and he decided to do so. The patient had had a baby four weeks before going into hospital. On the night before the operation her temperature rose to 104°F., and she had several rigors. On the morning of the day of the operation her temperature was still 104°, and her pulse 140. Having to leave town, he was in a difficulty as to how to deal with the case; operation was contra-indicated, and so he thought it best to wash out the uterus and see if he could find the cause of the rise in temperature. Before doing so he passed a sound, and this passed into the abdominal cavity straight through the fundus, whose resistance was quite inappreciable. He did not like to leave a probably septic uterus with an opening into the peritoneum, and so he removed the uterus by the vagina and as much of the cancerous vaginal wall as he could. After the operation, he split the uterus to see why the sound had gone through it, and he found that there was a cone-shaped excavation extending through the fundus almost up to the peritoneum. The rest of the wall preserved its normal thickness. Microscopical examination of the fundus showed no evidence of malignant growth. The only explanation he could offer as to the cause of the perforation was that the placenta had exercised an eroding influence on the uterus at one spot. The patient got better for a time, but died about two months afterwards of general metastases and weakness. The second specimen was two carcinomatous ovaries removed from a patient on whom Dr. Haughton had performed a double-breast operation about six months before. There could be no doubt that the ovarian tumours were secondary to the breast tumours.

Dr. Horne expressed great interest in the case, as he had had to perform a similar operation recently on two patients, both comparatively young, thirty-two and thirty-four. In one case, when he traced the broad ligament into the left ovary, he found a mass of cancer, of which he would have known nothing if he had attacked the case by the vaginal method. Three months later she had symptoms of return, and he found another mass of cancer high up in the abdomen.

The President exhibited a *Double Pyosalpinx removed Intact.* He said the patient complained only of sterility. She had no pain, and she did not look ill. She was young, two or three years married, and had been sent to him to be curetted. He palpated the tumours, and diagnosed double ovarian cyst; the uterus was felt lying between them. He was very much surprised to find that they were really very large tubes. They were taken out joined together and without difficulty. The point of interest was that he hoped he had thus cured the patient's sterility. There was one ovarian cyst, which was removed. The other ovary was resected, and a good sound piece left behind, together with healthy tube stumps.

Discussion on the Changes which have been suggested by the General Medical Council in the method of Teaching Practical Obstetrics.

Sir William Smyly, in opening the discussion, said that the circumstances which had led up to the action of the General Medical Council originated in the discovery of the true nature of puerperal fever by Semmelweiss, its causation by Pasteur, and its prevention by Lord Lister; in consequence of which this scourge had been practically banished from our lying-in hospitals. The hope that a similar result would follow in general practice had not been realised, and Dr. Boxall had shown that from

the returns of the Registrar-General it appeared that the maternal mortality from septic infections in childbed was even worse than it had been. The numerous papers and voluminous correspondence which this communication provoked produced a profound impression in England, the outcome of which has been the Midwives Act and the efforts on the part of the General Medical Council to improve the education of students in midwifery. Unfortunately, in this country so little interest was manifested that Ireland has been excluded from the Midwives Act, to our great injury and loss. The General Medical Council, in its efforts to improve both education and examination in obstetrics, has been hampered by the necessity of trying to reconcile what is desirable with what is possible. In England the opportunities for the teaching of practical midwifery are of the most meagre description, as is abundantly proved by the replies sent to their enquiries by the teaching bodies, so that they were forced to make very moderate demands upon students with regard to the practical study of midwifery, and even those demands would appear to be impossible to carry out in practice. But, when we consider their application to this country, with its great lying-in hospitals, it would be a retrogression to adopt any of the recommendations of the General Medical Council, for I have not the slightest hesitation in stating that a six months' attendance on the practice of any one of them is more likely to produce an efficient obstetrician. How is it then that, as pointed out by Dr. Boxall, our results in general practice are worse than in England? In so far as the fault can be brought home to our practitioners, it can only be due to their having failed to profit by the advantages placed at their disposal. In order to remedy this, students must be either compelled to attend a certain number of confinements or demonstrations, or, what would be much better, a desire to study practical obstetrics must be aroused in them by adopting the recommendation of the General Medical Council with regard to practical clinical examination. As to the value of such an examination, there can, I think, be no second opinion, but as to the possibility of carrying it out in practice, there is ample room for discussion. I would make two suggestions, but I hope that some better ones may be brought forward to-night. If it be thought desirable to examine every student practically and clinically, then let us agree and try to carry it out for there is no lack of material. But the chief objection that I have to such an arrangement is its want of proportion. Why should every student be examined clinically upon one organ, be it the uterus or the eye, and not upon all? If this rule is to apply to the female pelvic organs, why not to those of the male also? the brain, spinal cord, and nerves; urinary, and lymphatic systems; muscles, bones, and everything else? This is a *reductio ad absurdum*, but to my mind the absurdity lies in the present arrangement, where every student is examined upon the eye and its diseases and none upon the female pelvic organs. In my opinion all that is required is that he should feel that a practical knowledge of obstetrics and gynæcology should be as useful in passing his examination as would a similar knowledge of other departments. Would it not be possible to select a certain number of students by ballot who would be required to examine an obstetric or gynæcological case instead of one surgical, medical, or ophthalmic one. But these are only matters of detail, the all-important point is—are we to have a practical clinical examination, or are we to continue in the old groove which has resulted in discredit to our Profession and disaster to lying-in women?

Dr. Horne said the subject was of particular interest to Dublin, which was practically the home of obstetrics. The Dublin School, for a great number of years, had rightly insisted that the course of study should be a comparatively long one, and the General Medical Council, in order to raise the standard of both England and Scotland, had offered to compromise with Dublin by suggesting that the period of study should be three months. The question of examinations was of great importance. There were great difficulties in the way of taking a number of students to a lying-in hospital to have them examined, but he believed with Sir William Smyly

that the difficulty could be overcome. He did not see why men could not be brought for examination to a lying-in hospital just as they were brought to a clinical hospital for examination of the chest. A grave defect in the teaching at present was that the students had only to satisfy the registrars of the various licensing bodies that they had taken out midwifery attendances. He would like to see men compelled to take out from forty to sixty clinical attendances during the three months. Midwives in Dublin were in a far better condition than students, as they were under the full control of the hospital; they were obliged to attend regularly day after day; they attended to the lectures, to the cliniques, and they saw cases from day to day. The students did not do so. He thought they were all agreed as to the first recommendation of the General Medical Council. As to the second, a great difficulty confronted them. Annually in Dublin something like two hundred students had to take out their course of midwifery. If they simply attended for three months, it would be utterly impossible to supply them with material for each man to take out his twenty conductions. The period was too short. How it would be accomplished in England he did not know, but he felt that if they in Ireland were unanimous, and kept to their rules, they would be still far in advance of the recommendations of the General Medical Council, and would have nothing to fear from them. The Dublin school had up to the present been recognized as the principal obstetrical school in the United Kingdom, and he did not believe that the keeping up of their standard would cause a single pupil to leave the country.

Dr. KIDD said he had always impressed on students the fact that when they were taking out their practical midwifery they were for the first time face to face with a practical side of their profession, which involved the safety of two lives. He, therefore, agreed that every student should have the experience recommended by the General Medical Council. He deprecated the desire to attend practical work before theoretical lectures. There was no subject in which it was more necessary to have a thorough knowledge of the theory before the practical was attempted. He thought the higher mortality in Ireland in obstetrics was due to the fact that while they could —to use Sir William Smyly's figure—bring the horse to the water and make him drink, they could not make him keep on drinking. It was an established fact that the mortality in the lying-in hospitals was lower than that of general practice in the country, notwithstanding that the dangers to a woman in a hospital were greater than those in private practice, and the cases were more morbid and serious. It was, therefore, forced upon them that the doctors and nurses did not carry out in general practice the same strict rules of asepsis as in the institutions where they were taught to do so. He thought that the practical aspect of examinations might be improved if it were made compulsory on students to have attended not only a number of cases in the house under the supervision of the medical officer, but also at the end of their period, to give clinical notes of the whole course of the puerperium, for at least five cases. He thought that the education of the student should be such as to enable him to detect when any case was abnormal, or becoming abnormal, so that he might then know that he should seek the assistance of those placed in supervision over him. As regards the period of six months, he felt that a man who lived in the precincts of a hospital for one month would, in all probability, lay up a greater store of knowledge than one who attended a lying-in hospital two days in the week for three months. The midwives, under the present rules, had an opportunity of being trained in even a more practical way than the students.

Dr. PUREFOY said they agreed that the clinical character in the examinations should be present in a greater degree than it had been, and an endeavour should be made now to bring it about. He suggested that some arrangement might be made with the masters of the hospitals, by which the Obstetrical Examiners of the colleges might make a monthly visit, and have opportunity given to examine certain students.

This would obviate the difficulty of carrying out the practical examination for a large number of students at one time. The additional advantages thus secured by the students was an important consideration. He thought an effort should be made to develop the plan of encouraging students to reside, even for one month, in some of the maternity hospitals. He did not think they should be in a hurry to adopt the General Medical Council's recommendation as to three months' attendance, except, perhaps, to the extent of allowing a certain number of students, who might particularly desire to do so, to take out their number of cases in that period. He also thought that some practical advance might be made if a committee of the masters and assistants were formed to carry out some of the suggestions which had been made.

Dr. HENRY JELLETT said the two points that appeared to him to stand out with special importance were the institution of practical examinations, and the regulations governing students' practical instruction in maternity hospitals. With regard to the first, he would only say that while he had no doubt as to its extreme advisability, he had doubt as to its practicability at present. They were all probably agreed that the recommendations of the General Medical Council were extremely good, with the exception of the alteration in the course of attendance at maternity hospitals from six to three months. In Ireland such an alteration would shorten the present course, whereas in England and Scotland it would raise it to a much higher standard than before. He was quite aware that the present state of affairs was open to the objection that all students did not attend the full course. This fact was due to the regulations of the licensing bodies, which regulations were capable of improvement, though they were very many degrees ahead of the regulations on the other side of the water, and considerably ahead in their potential capacities of the recommendations of the Council. They all wanted to teach students properly, both to maintain the reputation of the school, and, still more, that students might be sent out with a proper training. Why, then, should they limit themselves to what was practicable on the other side of the water? A three months' course presented the great practical difficulty that students could not be given their twenty cases in so short a time. Students had a habit of going to maternity hospitals at certain months, which were free from examinations and lectures, and if limited to a three months' course, a student would frequently be unable to complete his necessary number of attendances or conductions, and the onus would then be thrown on the hospitals to provide cases and to provide extra time. He thought that an intimation from the hospitals to Colleges as to the impracticability of providing twenty cases for every student in three months would show the difficulty of the matter to those who did not understand it. It was absurd to think that students would be driven out of the country by the present system, since the difference between the courses in Ireland and in Great Britain will be lessened instead of being increased. He thought the Section might suggest to the Colleges, in a resolution, that some more definite regulations should be laid down to govern the attendance of students at maternity hospitals. In the recommendations of the General Medical Council, the student is required to attend regularly for three months, but there is no definition as to the meaning of the word "regularly." He thought that if the Colleges adhered to their six months' course, and made some attempt to define regular attendance, they would not only maintain, but enhance the reputation of the Dublin School, and would make the obstetrical training of the greatest value to the student.

Dr. ROWLETTE said that the medical curriculum seemed at present to be overweighted, and if any part of it was to be increased, other parts would have to be diminished, and the clinical teachers must impress on their brethren who taught the more purely scientific branches at the beginning of the course that that part must be cut somewhat short. The reason why the student took the minimum quantity of

instruction in midwifery and gynæcology was that he was worn down by the earlier studies which were made so great and difficult that his clinical work was often crowded into the last eighteen months. If teachers of anatomy and physiology were capable of doing their duty, botany and zoology were unnecessary. There were certain faults in the final examinations in midwifery and gynæcology, which, being taken away, the subjects would be more attractive to students: one was the excessive amount of surgery required by the gynæcological examiner; it was no part of the duty of an ordinary medical practitioner to be able to perform highly technical operations. If the student was going to be a specialist he must make up his work after his qualifying examination, not before it. He was only referring to highly technical operations; operations of emergency must, of course, be within the knowledge of every medical man. As to the high mortality in private practice, he thought it might be explained by the fact that more cases of childbirth were left unattended by medical men in Ireland than in England. It was also quite impossible for a medical man to practice the same aseptic precautions in a country cottage as in a hospital.

Dr. Trevor Smith said that much of the fault for the existing state of things lay in the fact that many of the nurses turned out were of a very inferior class. Illiterate nurses who did not know the use of the thermometer were often left in charge of women without the assistance of a medical man. He was not referring to the handywoman, but to so-called nurses who held diplomas.

The President said it was pleasant to see with what unanimity the members of the Obstetrical Section opposed the suggested curtailment of the period at present deemed necessary for attendance at maternity hospitals. Outside this Section he regretted to say that many teachers were of opinion that a six months' course of study of midwifery and gynæcology was quite unnecessary, and unless energetic action was taken he much feared that the Royal Colleges would cut down the course to three months. He was certain this step, were it adopted, would make it very difficult for the maternity hospitals to deal with the number of patients they at present attend. He agreed that the present regulations of the licensing bodies in respect to midwifery required alterations, but the change should not be a retrograde one. These bodies should determine in the first instance precisely what they mean by an attendance for six months. If they do this they may rely upon the hospitals to enforce their regulations. At present the six months' attendance was interpreted in a very lose manner by some students, and those who desire to evade the course could, to a large extent, do so. On the other hand, many men considered it a great privilege to be permitted so long a course, and it was to these men we look to sustain the future reputation of the Dublin School of Obstetrics.

It was then proposed by Sir William Smyly, seconded by Dr. Jellett, and passed unanimously: "That the Obstetrical Section of the Academy of Medicine regards the recommendations of the General Medical Council regarding Obstetrical teaching as, in many cases, a very great advance on the present conditions. The Section, however, considers that the suggested alteration of the period of attendance on a maternity hospital from six months would not be advisable or practicable. The Section considers that instead of reducing the attendance the licensing bodies should adopt such regulations as will insure regular attendance of students at the clinical teaching of the hospitals. With regard to the adoption of a practical examination in midwifery and gynæcology, the Section considers that such a step is most desirable, and urges its members to aid it by all means in their power."

Dr. Purefoy then proposed, Dr. Kidd seconded, and it was passed unanimously: "That a committee consisting of the Masters, Assistants (past and present) of the Dublin Maternity Hospitals be appointed for the purpose of urging upon the licensing bodies the inadvisability of changing the course of practical Obstetrics from six months to three months."

REVIEWS OF RECENT BOOKS.

OBSTETRICS: A TEXT-BOOK FOR THE USE OF STUDENTS AND PRACTITIONERS. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-chief to the Johns Hopkins Hospital, etc. Second enlarged and revised edition, with 16 plates and 666 illustrations in the text. Pp. xxviii, 950. London: Sidney Appleton, 1908. Price 25s. net.

Every obstetrician who is interested in the scientific aspects of his specialty will welcome the appearance of the second edition of Whitridge Williams's Obstetrics, for it is to him more than to the general practitioner that the work appeals, at any rate in the first instance. If, however, the medical student and the medical practitioner will both of them find time to read carefully the 950 closely packed pages with which the author has supplied them they will be well equipped indeed for the practice of midwifery, and will know the theories upon which that practice is based. At the same time, it is, as we have said, to the specialist that the book makes its strongest appeal.

This edition maintains and even emphasizes the outstanding features of the first issue. For instance, the scientific side of the study of pregnancy is enriched by several paragraphs on the general metabolism of gestation, and the closely associated subject of the toxæmias is fully dealt with. It does not appear, however, that the author has been able to refer to Professor Bar's monumental work—*Leçons de Pathologie Obstétricale*,—nearly of the same size as the work under review, in which the whole subject of the normal and pathological metabolism of pregnancy is exhaustively and originally treated. The new sections on vaginal Cæsarean section and on pubiotomy are well put together, and ought to be of great assistance to obstetricians who might wish to practice these operative procedures and who have not been fortunate enough to have seen them actually performed.

Althoug Professor Whitridge Williams's book, in this edition, reaches a high standard of merit, it is nevertheless capable of improvement and amendment; and if we venture to point out some defects, we do so with the desire to improve a good book, and not to condemn a poor one. Some of the defects of the work are those due to its quality. For instance, the wide reading of the author, especially in German literature, has led him to overweight his text with the names of Continental observers, names which must in many instances be quite unfamiliar to his readers (if they are of the two classes named in the title page); many of them might be omitted with little or no loss. Again, the literature lists are excellent so far as they go, but, of course, they do not claim to be complete; indeed we gather that they represent only the articles which the author has been able personally to consult; this being so, it might be advisable to omit them in the future and so gain space and reduce the bulk of the volume. Again, the work is admirably adapted for use in the United States of America, not so clearly so for this country. For instance, most of the illustrations represent the parturient patient lying on her back; and, of course, in this country, she is generally in the left lateral position, at any rate when she is under the care of the general practitioner. Then again, the rules for the preparation for labour apply rather to translantic than to British practice. It may be said that this is unavoidable in an American text-book written by an American Professor; but then the only place of publication named on the title page is *London*, and presumably

the work is expected to circulate in this country. By the way, the placing of the name *London* on the title page may lead to confusion in the minor details of the letterpress; thus, on page 2, the author speaks of "Hodge in this country," but by "this country" he means America and not Britain.

Then, there are some slips. The "J. R. Simpson, of Edinburgh, mentioned on page 467, is no doubt Sir Alexander R. Simpson, for the author goes on to speak of him as the inventor of the basilyst; but, again, the basilyst is described as a three-bladed instrument, and it is evident therefore that the *basilyst-tractor* is what Professor Williams is referring to and not the basilyst. On page 85 occurs the statement that *Stevenson* and others have accepted the menstrual wave theory of metabolism in women; it would seem that Professor *Stephenson*, of Aberdeen, is meant. In this connexion, we note that Heape's views on menstruation are not referred to, and yet no more important contribution has been made to the physiology of menstruation within recent years than his. Sir J. Y. Simpson is called "the discoverer of chloroform"; correctly speaking, he was the discoverer of the anæsthetic properties of the drug, not of the drug itself.

The only type of axis-traction forceps to which the author refers is Tarnier's; and a good many British and, we believe, American obstetricians also will agree with him in thinking that it is superior to all other axis-traction forceps; the very fact that it has the characters of the French forceps makes it less convenient for British use. The operative procedure known as cleidotomy or division of the clavicles is described; but, curiously enough, it is referred to only in connexion with dystocia due to large size of the fœtus, and not in relation to its much more frequent indication as a sequel to craniotomy or basilysis. Under the heading of hydrocephalus as a cause of delay in labour the only treatment mentioned is perforation followed by the use of the cranioclast; in our experience the only thing needed in the cases in which the hydrocephalic head presents is aspiration of the head through one of the membranous interspaces. In the instances in which the hydrocephalic fœtus presents by the breech, tapping of the cranial contents by means of a metal catheter passed up the spinal canal will be found to be of great service; since the catheter passes through the medulla oblongata the *contretemps* which Professor Williams seems to dread so much —the birth of a living hydrocephalic child with a broken-up head-will be surely avoided.

We repeat that while we have criticized this text-book on obstetrics, and have pointed out some slips and minor defects, we none the less regard it as an eminently scientific and well-written treatise on the subject, one which will be valued by the obstetrician who wishes to have more than the usual text-book acquaintance with the problems of the safe management of the pregnant, parturient, and puerperal woman, and of her new-born infant. J. W. B.

THE PRACTICE OF OBSTETRICS BY AMERICAN AUTHORS. Edited by Chas. Jewett, M.D. Third edition revised and enlarged. London: Henry Kimpton, 1907. Price 21s. net.

This important work, to which many of the most distinguished American obstetricians make contributions, is divided into eight parts:—Part 1, Anatomy; Part 2, Physiology of Pregnancy; Part 3, Physiology of Labour; Part 4, Physiology of the Puerperium; Part 5, Pathology of Pregnancy; Part 6, Pathology of Labour; Part 7, Pathology of the Puerperium; and Part 8, Obstetric Surgery.

Taken as a whole the work, although of a fair average standard, is somewhat disappointing and presents no very great advance over the last edition, published in

1902. This is all the more apparent if one takes what is undoubtedly the most valuable chapter (Chapter XXVII), "Puerperal Infection," by J. Whitridge Williams, M.D. This contribution stands out so prominently, by reason of its excellence, that it dwarfs all the rest.

Regarding the first three parts little need be said. Much of the Anatomy might well have been omitted. We are inclined also to think that the writer of the chapter on the "Development of the Ovum" would have approached the subject with greater advantage if he had brought forward prominently the features that characterized the "implantation of the ovum" and left out of account altogether "the development of the fœtus," for the latter subject belongs to pure embryology, while the former has important bearings on the normal and pathological conditions of pregnancy.

There is nothing striking in the chapters on "Normal Pregnancy and Labour." One cannot help wishing that the writer had considered the subject through frozen sections and directed more attention to the lower uterine segment. "The Management of normal Labour" by the Editor himself, and the chapters on "The Puerperal State" and "The New-born Child and its Management" (Chapters IX, X, and XI) are amongst the best.

The chapter on the "Pathology of the Fœtus" consists practically of a classification of the different abnormalities present, probably the best method of treating this subject in an obstetric work.

The chapters on "Abortion" and "Ectopic Pregnancy" present no outstanding features. The treatment of the conditions in both chapters is clear and exhaustive, but the diagnosis, especially the diagnosis of extra-uterine pregnancy, is somewhat vague. In writing of the diagnosis of abortion the writer says:—"The questions confronting the examiner then would be: (1) Has the woman been pregnant? (2) Has she aborted? (3) Has the abortion been complete or incomplete?" We would add a fourth question that should be answered in such cases: "Is the pregnancy uterine or extra-uterine?"

The chapter on "Diseases of Pregnancy" (Chapter XVIII) is very short, occupying only 9 pages. Surely eclampsia should be considered in such a chapter rather than in connexion with the pathology of labour, as the Editor has done.

All the chapters on the "Pathology of Labour" (in relation to the forces, the child and the passage) are fairly complete, but it is disappointing to find the writers not considering more fully the treatment of contracted pelvis or indicating more exactly the circumstances under which the different operations are called for.

In connexion with "Placenta Prævia" the treatment is fully considered, and the metreurynter recommended when the os is only slightly dilated. The treatment of "Accidental Hæmorrhage," however, barely occupies a page. Is not such an important subject worthy of fuller consideration? In this connexion we notice that the writer makes no mention of the treatment by plugging. He says: "In cases of alarming hæmorrhage, if the os is small, dilatation should be initiated with a metal dilator and completed manually. A firm abdominal binder helps to prevent further accumulation of blood in the uterus." So far as we are aware this treatment by accouchement forcé has not given good results. He also mentions that "in cases where the cervix is undilated and immediate delivery is demanded recourse may be had to multiple incisions of the cervix, or in extreme cases, to Cæsarean section. As a rule this is best done by the vaginal route after the method of Dührssen." The writer does not state that the uterus should be removed.

Eclampsia, especially the treatment of this condition, is very fully considered. The writer favours a trial of medicinal treatment before having recourse to evacuating the uterus. He says: "The writer's preference is for chloroform, veratrum viride, and chloral, in the order named. Until three years ago, he used morphine freely in eclampsia, but has since abandoned its use almost entirely, as it apparently prolongs

the post-eclamptic stupor, and increases the tendency to death during coma, by interfering with the eliminative forces." Accouchement forcé is fully considered in this chapter; would it not have been more appropriately discussed in Part 8, the part devoted to Obstetric Surgery?

All the obstetric operations are considered (Chapter XXII), "Cæsarean Section, Porro Operation and Symphysiotomy" being the best. Especially good are the remarks on and the description of the operation of Symphysiotomy, and this is what might be expected as Professor Jewett has long been one of the outstanding American writers who favour this operation.

The chapter on Induction of Labour is somewhat disappointing, not so much in regard to the details of the methods of operating as in regard to the indications for the operation.

The illustrations, which number 448, are excellent.

NOTES.

The recent changes in the Obstetric and Gynæcological teaching staffs of the Foreign Universities have been so extensive that it has been necessary to notice appointments made some months ago.

At Paris: Dr. Bar has been appointed a member of the Academy of Medicine in the Section of Obstetrics, and to the Chair of Clinical Midwifery in the Faculty of Medicine, in each case in succession to the late Professor Budin.

Dr. Couvelaire and Dr. Jeannin have recently been *agrégés* at Paris, Dr. Pery at Bordeaux, Dr. Voron at Lyons, and Dr. Garipny at Toulouse.

The following appointments have been made to provincial chairs of Clinical Midwifery: at Grenoble, Dr. Termier; at Rennes, Dr. Hardouin, and at Toulouse Dr. Audebert.

The late Professor Poirier bequeathed £20,000 for a maternity at Grandville.

At Berlin: Professor Dr. Robert Olshausen, Director of the University Frauenklinik, has recently celebrated the 50th anniversary of his Doctorate; the Predicate of Professor has been conferred on Privat-Dozent Dr. L. Blumreich; Dr. Liepman and Dr. K. Kroemer have qualified as Privat-Dozenten of Gynæcology.

At Bonn: Dr. Erich Zurhelle has qualified as Privat-Dozent of Obstetrics and Gynæcology.

At Breslau: Privat-Dozent Dr. Roland Sticker died, owing to an accident; Dr. Hannes has qualified as Privat-Dozent of Obstetrics and Gynæcology.

At Düsseldorf: Professor Ernest Opitz, of Marburg, becomes Director of the University Frauenklinik in succession to Professor Sellheim, who has gone to Tübingen.

At Geneva: the Chair of Obstetrics and Gynæcology was left vacant early in the year by the death of Professor Alcide Jentzer in his 58th year. The appointment was conferred on Professor Oscar Beuttner, of the same University. Privat-Dozent, Dr. Raoul de Seigneux, has been made an extraordinary Professor and Director of the Gynæcological Poliklinik.

At Giessen: Professor Ffannenstiel, who has gone to Kiel, is succeeded by Professor Otto v. Franqué, of Prague.

At Greifswald: Professor August Martin has resigned the Chair of Obstetrics and Gynæcology. Professor Stoeckel, of Berlin, who was appointed to succeed him, before entering on his duties accepted a call elsewhere, and the Chair has been given to Professor Max Henkel, Senior Physician at the Berlin University Frauenklinik under Professor Olshausen.

At Heidelberg: Professor von Rosthorn has been succeeded by Professor Dr. Menge, Ordinarius at Erlangen.

At Jena: the veteran, Professor Bernard Sigmund Schultze, celebrated his 80th birthday on the 29th December last.

At Kiel: Professor R. Werth having resigned, the Chair of Obstetrics and Gynæcology has been given to Professor John Pfannenstiel, Director of the University Frauenklinik at Giessen.

At Königsberg: Dr. Isfried Hofbauer has qualified as Privat-Dozent of Obstetrics and Gynæcology.

At Leipzig: Professor Dr. Adolf Glockner, Director of the Private Klinik and Poliklinik founded by Saenger, died at the early age of 37, after a long illness, and has been succeeded by Professor Skutsch.

At Marburg: Professor Ahlfeld has resigned the Chair of Obstetrics and Gynæcology, and the post of Director of the University Frauenklinik. Professor Stoeckel has relinquished the position he had accepted at Greifswald, in favour of succeeding Professor Ahlfeld at Marburg.

At Munich: Professor Franz Ritter von Winckel, who celebrated his 70th birthday last year, has retired, and is succeeded in his Professional Chair and as Director of the University Frauenklinik, by Professor Albert Döderlein, of Tübingen; Dr. Karl Baisch, Privat-Dozent at Tübingen, has obtained the "venia legendi" at Munich.

At Prague: Privat-Dozent W. Pitha has been made an Extraordinary Professor, and Dr. Anton Ostreil has qualified as Privat-Dozent of Obstetrics.

At Rostock: Dr. Adolf Bennecke has qualified as Privat-Dozent of Obstetrics and Gynæcology.

At Tübingen: the Chair vacated by Döderlein was offered to Professor Menge, who has, however, definitely accepted the professorship at Heidelberg, and Döderlein's successor is to be Professor Hugo Sellheim, who was called from Freiburg to Düsseldorf about two years ago.

At Vienna: at his own wish, and unfortunately owing to ill-health, Professor Chrobak has retired three years before the age limit. His successor in the Chair of Obstetrics and as Director of the New Frauenklinik No. 11, is Professor Alfons von Rosthorn, formerly of the German University at Prague, later at Graz, and for the last few years at Heidelberg. Dr. Schottländer, extraordinary Professor of Gynæcology at Heidelberg, has elected to accompany his chief and take the position of Director of the Laboratory of the New Frauenklinik at Vienna.

Dr. Fritz Hitchmann, of Schauta's Klinik, and Dr. Ludwig Mandll, have been made Privat-Dozenten in the Medical Faculty of the University.

At the 25th Congress for Internal Medicine to be held in Vienna from the 6th to the 9th April next, Professor von Rosthorn and Doctor Lenhartz (Hamburg) will introduce a discussion with reports upon "The relations of the female sexual organs to internal diseases."

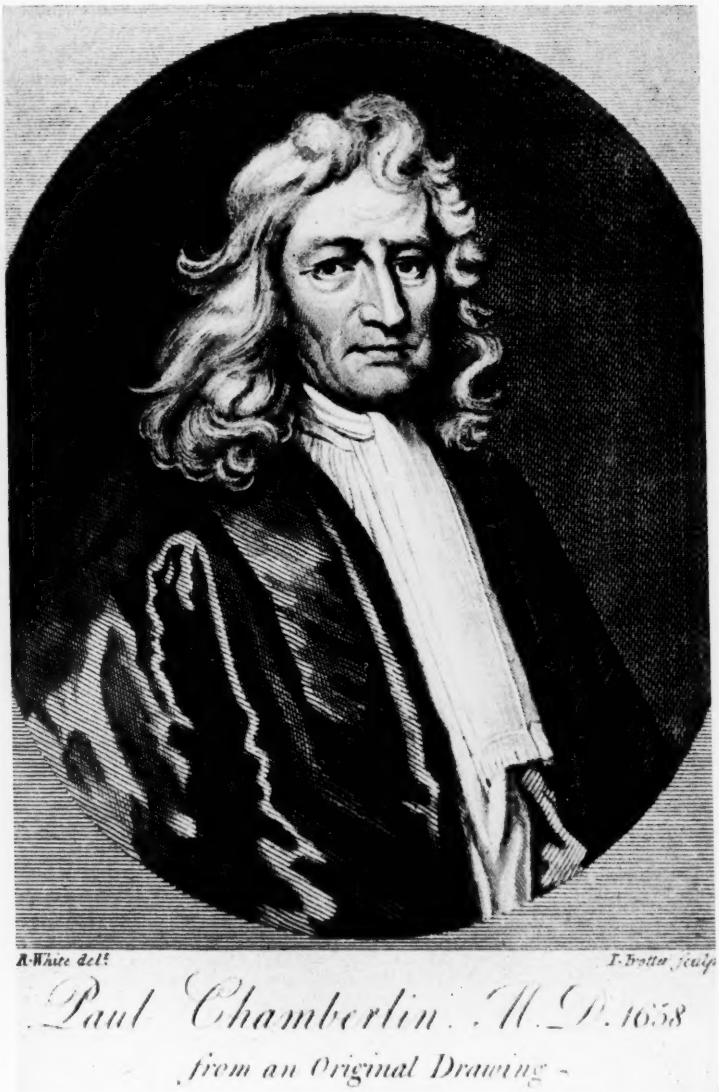
At Cracow: Dr. Alexandre Rosner succeeds the late Dr. Heinrich Jordan as Professor of Obstetrics and Gynæcology.

At Naples: Professor M. O. Morisani has retired, and his successor in the Chair of Obstetrics is Professor G. Miranda, who had been appointed to a similar position in the Medical Faculty at Catania earlier in the year.

At Turin: Dr. Giuseppe Vicarelli has been made an Extraordinary Professor of Midwifery.

The "venia legendi" has been granted to Dr. Giuseppe Cristalli, at Naples; to Dr. Gino Acconci, and to Dr. Carlo Pinto, at Pavia.

At Milan: Professor de Cristofori recently celebrated the 50th anniversary of his laureat.



Portrait of Peter (not Paul) Chamberlin.